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CONTENTS

	PAGE
Editorials	237
Letters to the Editor	241
Publications Received	241
The Scrap Heap	242
Overseas Railway Affairs	243
Peat Substitute for Locomotive Coal in Ireland	245
The Railways of Chile	245
Electric Traction Section	247
New Air-Conditioned Corridor Coaches, B.B. & C.I.R.	251
Re-boilered Tank Engines, L.M.S.R.	253
Railway News Section	255
Personal	255
Transport Services and the War	257
Stock Market and Table	264

DIESEL RAILWAY TRACTION SUPPLEMENT

The March issue of THE RAILWAY GAZETTE *Supplement, illustrating and describing developments in Diesel Railway Traction, is now ready, price* 1s.

NOTICE TO SUBSCRIBERS

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TO CALLERS AND TELEPHONERS

Until further notice our office hours are:—
Mondays to Fridays - 9.30 *a.m. till* 5.0 *p.m.*
The office will be closed on Saturdays

The New President of the Mechanicals

A WELL-DESERVED tribute to locomotive engineers was paid by Mr. Asa Binns, the retiring President, at the annual general meeting of the Institution of Mechanical Engineers on February 21, when Mr. W. A. Stanier took the chair as newly-elected President. Mr. Binns pointed out how fortunate the institution had been in having had a number of eminent locomotive engineers as President. George Stephenson, its first President, belonged to this branch of the profession, and even during the ten years that Mr. Binns had been a member of the council, two locomotive engineers, Colonel Kitson Clark and Sir Nigel Gresley, had in turn been President. Mr. Stanier served his apprenticeship at the Swindon works of the G.W.R., which has produced so many famous engineers, and is now Chief Mechanical Engineer of the London Midland & Scottish Railway, "one of the finest appointments in the locomotive engineering world," to use Mr. Binns's phrase. In July, 1938, Mr. Stanier was appointed a Member of the Government of India committee of inquiry into the design and purchase of Pacific locomotives, which was set up as the result of a recommendation made by the Hon. Mr. Justice Thom, Kt., D.S.O., K.C. (who reported on the Bihta derailment on the East Indian Railway), for an "expert independent committee to inquire into the design, the purchase, and continued purchase of 'XB' locomotives."

* * * *

Stanier L.M.S.R. Locomotives

During his tenure of office as Chief Mechanical Engineer of the London Midland & Scottish Railway, Mr. Stanier has introduced several new and efficient classes of locomotives to meet traffic requirements of different kinds. His Pacific express engines, streamlined and otherwise, have proved most successful in working heavy express passenger trains on the L.M.S.R. main lines; the "5X" 4-6-0 passenger locomotives are also proving a useful class in passenger service, whilst the Class "5" mixed traffic 4–6–0's are recognised as being one of the best general utility classes in the country. Heavy freight engines of the 2-8-0 type, of Mr. Stanier's design, are satisfactorily doing a large amount of work on the L.M.S.R.; it was this design that was selected when the decision was reached to build a large number of engines in this country for service in France in the early part of the war. His other designs include 2-6-4 and 2-6-2 tank engines used for suburban and other passenger workings. It is of interest to note that in these several designs the opportunity has been taken of using varying cylinder arrangements, some of the engines having two, others three, and others again four cylinders.

* * * *

Forced Payment of Dividends

So seldom does the position arise that probably few are aware that on the initiative of the Inland Revenue a company can be directed to pay dividends to its shareholders, notwithstanding that the directors have recommended otherwise and that the shareholders have endorsed the recommendation. Under section 21 of the Finance Act, 1922, a company is obliged to distribute to its proprietors "a reasonable part of its actual income from all sources." In this way members of the company become liable to tax on the sums distributed, to the satisfaction of the Exchequer. Recently a public company, after paying no ordinary dividends for the financial years to March, 1938, and 1939, agreed to distribute 7½ per cent. and 7 per cent., less tax, respectively. The earnings on the ordinary shares in the two years were 19·6 per cent. and 16·9 per cent., and the case is of some interest as giving an indication of what the Inland Revenue authorities may regard as a satisfactory distribution of profits. Railway companies, of course, customarily distribute earnings to the maximum extent possible, for their directors have always to bear in mind a fact which does not apply to the generality of industrial undertakings—this is that the need for capital expenditure is ever present and unless stock holders were remunerated as well as possible it would speedily become impracticable to raise further capital. On the British railways earnings for long have been so poor, and the return on ordinary stock has become so meagre, that it has become impossible to raise new money except in the

form of debentures. Not the least important reason why railways should be put in a position to earn satisfactory revenue in normal times is to be found in the desirability of enabling them to attract investors to issues of junior stocks and thus avoid adding to the already large burden of fixed interest on prior charges.

* * * *

Overseas Railway Traffics

A rather better showing has been made by some of the Argentine railway companies during the past fortnight. The Buenos Ayres & Pacific Railway has made continued progress and during the 33rd and 34th weeks of the current financial year it has added 70,000 pesos to its receipts. The Buenos Ayres Western Railway has recorded an advance of 132,000 pesos during the same period, and the Central Argentine has improved its position to the extent of 721,350 pesos, but still shows a very heavy decline in its aggregate traffic for the year. On the Buenos Ayres Great Southern system there has been a further decline amounting to 702,000 pesos over the two weeks and the Argentine North Eastern Railway has lost an additional 38,900 pesos.

	No. of Weeks	Weekly Traffics	Inc. or Decrease	Aggregate Traffic	Increase or Decrease
Buenos Ayres & Pacific* ...	34th	1,908	+ 38	44,308	— 755
Buenos Ayres Great Southern*	34th	2,847	— 269	71,373	— 7,133
Buenos Ayres Western* ...	34th	929	+ 98	24,397	— 2,024
Central Argentine*	34th	2,061	+ 400	50,162	— 10,694
		£	£	£	£
Canadian Pacific	7th	647,000	+ 90,400	4,949,400	+ 725,600
Bombay, Baroda & Central India	48th	355,200	+ 81,075	9,086,925	+ 1,060,275

* Traffic returns in thousands of pesos.

On the Entre Rios there was a fall of 45,800 pesos. The Central Uruguay Railway, although showing a decline of currency for the 34 weeks of the year, has an increase in sterling of £32,749.

* * * *

Mersey Railway Company

The modified form of accounts issued as a result of the war provides few data, but it is apparent that the progress which has been noted on the Mersey Railway for the past several years was continued in 1940. The report of the directors shows that the net revenue for the year, after giving effect to the estimated operation of the financial arrangements with the Government for the control of the railway undertakings, was £104,462, against £100,938 for 1939. The balance brought forward was £2,973 and the amount available is £107,435, against £103,538. This year £1,500 has been placed to income tax reserve, and after meeting interest on debenture stocks there is a balance available for dividends and general reserve of £49,792, which compares with £47,395 for 1939. An appropriation of £2,000 is again made to general reserve and the dividend on the 3 per cent. perpetual preference stock absorbs £19,472. From the balance of £28,320 (against £25,923) available for dividend on the consolidated ordinary stock the directors recommend a payment at the rate of 1¾ per cent., which absorbs £24,715, compared with the £22,950 required to meet the dividend of 1⅝ per cent. paid for 1939. The balance carried forward is £3,605.

* * * *

The Bulgarian State Railways in 1940

The increasingly tense situation in the Balkans, and the virtual severance of all communication between most of the Balkan States and the West, give added interest to the meagre details available about railway progress in that part of Europe since the outbreak of the present war. According to an American Legation report from Sofia, railway traffic on the Bulgarian State Railways during the first six months of 1940 increased, continuing the rising trend which has lasted since 1935. The steady increase in passenger traffic has been due largely to the encouragement of local tourist trade, but the growth in freight traffic has been the result of larger cereal exports from the abundant 1939 crop, and increased commercial activity in general, probably in the supply of goods to Germany in the main. Passenger receipts amounted to 245,000,000 leva during the first six months of 1940, compared with 215,300,000 in the previous comparable period, while income from merchandise traffic increased by 49,000,000 leva to 480,000,000. Receipts from various sources were 37,000,000 leva, an increase of 3,900,000. Income for the entire year 1939 amounted to 479,600,000 leva for passengers, 1,060,700,000 for merchandise, and 85,900,000 from various sources.

* * * *

Railways in French Indo-China

Railway receipts and wagon loadings increased on all the French railways in Indo-China during the second quarter of 1940 as compared with the second quarter of 1939, and the first quarter of 1940, according to information reaching this country through the American Consulate in Saigon. Despite the cessation of traffic from June 17 last over the Haiphong-Yunnanfou line, as a consequence of Japanese demands, wagon loadings for the second quarter of 1940 increased over the first and second quarters of 1939. Figures for the entire second quarter are not available for other lines, but those to the end of May indicate that there was probably but little change from either of the other quarters with which comparison has been made. The following table indicates the income of, and traffic over, the Indo-Chinese railways :—

	1939, second quarter	1940, first quarter	1940, second quarter
Receipts (thousands of piastres) :—			
Haiphong-Yunnanfou line	3,682	2,983	3,920*
Other lines	2,901·7	3,350·1	3,622·4
Car-loadings (number, daily average) :—			
Haiphong-Yunnanfou line	600	486	607*
Other lines	1,145	1,057	706

* To end of May only

The total railway mileage in the country is 3,383 km., all of metre gauge. The Haiphong-Yunnanfou Railway accounts for 859 km. Yunnanfou (or fu) is now generally known in China as Kunming; its position is shown on the map on page 244.

* * * *

Unusual Locomotive Fuel Substitutes

Restriction by the war of coal distribution almost throughout the world is causing many countries to try various locomotive fuel substitutes. In Argentina maize by itself or mixed with coal is on trial, and in the Astrachan area of the U.S.S.R., two locomotive depots are reported to have been turned over entirely to the use of rushes as fuel. Much nearer home, however, the Great Northern Railway of Ireland is conducting thorough running trials to ascertain whether peat can be used efficiently and economically instead of coal, and some preliminary notes on these trials will be found on page 245. From these it may be noted that, despite certain drawbacks inseparable from its use, machine-cut peat in its natural form, and burnt in a locomotive with no major alteration in its design, produces a higher degree of superheat than coal; it also obviates clinker troubles and reduces tube maintenance by reason of its lower ash and sulphur contents. Better all-round results are, however, expected from the use of peat in an air-carried pulverised form, with which it is hoped to experiment shortly, though this will entail greater modification in the locomotive. The Great Southern Railways, on the other hand, consider that for the use of peat drastic and costly locomotive alterations are essential, and that though peat charcoal has decided advantages, it is not at present available in adequate quantity or at a price comparable with that of coal.

* * * *

Outer Suburban Traffic

The very marked increase during the past twenty years in long-distance outer suburban traffic on many routes has occasioned some operating problems which cannot always be solved easily even in peacetime, and which are intensified by war conditions. These problems arise especially from the need for a comparatively high speed of transit, as long-distance season-ticket traffic must have reasonably fast business trains to prove practicable to the users. Moreover, there is also a demand for frequency of service and convenient facilities in the late evening and at other periods apart from the usual hours of travel. If four-track facilities exist for a considerable part, or the whole of the route in question, it is usually practicable to give a clear road during busy periods, even if the fast suburban trains have to be scheduled among fair numbers of express and other main-line trains. But on

two-track routes the problem is often difficult, and sometimes can be solved only by compromise arrangements as an alternative to sacrificing some of the intermediate facilities. The trouble is, however, that compromise arrangements tend to cause dissatisfaction to both inner and outer suburban passengers on a route which has to meet the requirements of both classes, and, although much ingenuity is often displayed by timetable staffs in scheming out practicable train services, strict punctuality that would make these effective is an essential which is seldom achievable in existing circumstances.

* * * *

Non-Stop Running

In a recent issue of our American contemporary the *Railway Age* an enquiry was made, in the correspondence columns, by the Assistant General Manager of the Denver & Rio Grande Western RR. concerning the longest non-stop runs made daily by steam locomotives. The question arose from the fact that, by the abolition of a service stop at Green River, his company is now running Train No. 6 non-stop over the 177 miles between Helper (Utah) and Grand Junction (Colorado), and he asked if this were a record in ordinary service. So far as can be ascertained, the only longer run made regularly by a steam locomotive in the U.S.A. is that of Train No. 15 of the New York Central System, which covers the 182·5 miles from Buffalo to the C. & P. Crossing at Cleveland non-stop in 178 min. It is curious that in the limited confines of our own island runs of far greater length than this, such as the 392·7-mile summer journey of the L.N.E.R. Flying Scotsman, or the three daily all-the-year-round L.M.S.R. non-stop runs of 299·1 miles between Euston and Carlisle (five in summer), should until the outbreak of war become so firmly established as no longer to make "front page news." Even in present war conditions the L.M.S.R. books its southbound Night Scot sleeping car service without a stop over the 214·6 miles from Carstairs to Crewe, including the negotiation of both Beattock and Shap summits *en route*. However, American railways can now claim at least one non-stop record, though not made daily and not with steam; for over Union Pacific metals the diesel-operated City of Los Angeles, twice a week in each direction, covers the 324·6 miles between Salt Lake City and Caliente without any intermediate halt in 310 min. in one direction, and 320 min. in the other.

* * * *

Pity the Poor Engine

At last a voice of protest has been raised in Parliament against the cruel treatment of engines which has far too long been tolerated by a thoughtless travelling public. It is Mr. Ritson, Durham's kind-hearted M.P., to whom every lover of locomotives owes a debt of gratitude. Speaking on February 19 in the debate on the coal industry, and confessing he knew nothing about engines, except that he knew "what end of a train to get into," he felt that some trains were overloaded to the extent of almost stultifying their purpose. "The engine is almost torn to pieces trying to get them out of the station," he cried. "There ought to be some practical man who understands these matters to deal with them. They should not be left to officials who are so high in their own estimation that they will not listen to the practical men they are in charge of." We understand that the formation of a Society for the Prevention of Cruelty to Engines is likely to be formed as a result of Mr. Ritson's public spirited protest, and that in the meantime instructions are to be issued to the more timorous of the travelling public as to which end of the train they should get into for their greater peace of mind.

* * * *

Railway Finance Corporation Loans

The annual reports of the four main-line railway companies for 1940 do not contain the usual references to the progress of new works being undertaken. It will be recalled that on the outbreak of war it was made known that work would be continued so far as essential works were concerned, although some curtailment of the programmes in hand was inevitable, but in the summer of 1940 it became apparent that it would be necessary to abandon for the time being other than projects connected directly with the war effort. In the report of the L.N.E.R. directors it is stated that "where it has been decided to proceed with works or portions of works which are being constructed under the Railways (Agreement) Act, 1935, and the London Passenger Transport (Agreement) Act, 1935, as good progress as possible has been made having regard to the more urgent demands for facilities for Government traffic and to the availability of materials." The following table shows the amount on loan from the Railway Finance Corporation Limited for each of the companies in 1939 and 1940 as shown in the balance sheets; the difference in the two figures is the amount by which the loans were increased during last year :—

	1939	1940	Increase
	£	£	£
Great Western Railway	5,435,660	5,435,660	—
London Midland & Scottish Railway	7,292,500	8,042,500	750,000
London & North Eastern Railway	4,500,000	5,500,000	1,000,000
Southern Railway	5,000,000	5,929,811	929,811

In the case of the Southern Railway the total sum agreed to be taken up under the Act of 1935 has now been reached.

* * * *

London & North Eastern Railway Company

AS shown by the preliminary statement published in THE RAILWAY GAZETTE of February 21, net revenue for the year 1940 was £10,350,992 which with the balance brought forward from the previous year, £83,279, made a total of £10,434,271. After providing for all fixed charges and dividends on the guaranteed stocks, appropriating £250,000 to contingency fund, and meeting the dividends on the 4 per cent. first preference stock and the 5 per cent. redeemable preference stock (1955), there remained a balance of £1,408,185. This allowed of a dividend of 2 per cent. against ¾ per cent. on the 4 per cent. second preference stock, leaving a balance of £85,341 to be carried forward. Dividend payments for the past 10 years are shown in the following table :—

	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940
	%	%	%	%	%	%	%	%	%	%
Pref. ord., 5%	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
2nd pref., 4%	1	Nil	Nil	Nil	Nil	¼	1¾	Nil	¾	2
1st pref., 4%	4	1	2	3¼	3¼	4	4	Nil	4	4
Red. pref., 5%	5	1¼	2½	4 1/16	4 1/16	5	5	Nil	5	5

The financial arrangements with the Minister of Transport have been the subject of further discussion as to details and have been embodied in a draft agreement. The financial accounts for the year ended December 31, 1940, in agreement with the Government, have been closed on the basis of the draft agreement, which provides, as to war damage, that the cost within a limit of £10,000,000 in any year chargeable to the pool account shall be spread equally over 13 four-weekly periods commencing with that in which the damage was suffered. The pool account for 1940 has been charged accordingly. The miscellaneous receipts of £470,459 shown for 1940 include £436,897 dividends from associated bus companies, compared with £402,739 in 1939. They also include the following profits from goods road undertakings, namely, £5,475 (against £14,963) from Carter Paterson & Co. Ltd., £4,781 (same) from Currie & Co. (Newcastle) Ltd., and £22,706 (against £22,087) from Hay's Wharf Cartage Co. Ltd. Results of the whole undertaking for the past three years are summarised in the accompanying table :—

	1938	1939	1940
	£	£	£
Total expenditure on capital account ...	355,750,167	357,556,143	360,878,911
Joint lines—Company's proportion of net revenue	610,126	484,729	350,558
Miscellaneous receipts (net)	993,049	464,835*	470,459*
Net revenue	6,653,167	9,271,030	10,350,992
Appropriation to contingency fund ...	—	—	250,000
Interest on loans and debenture stocks, etc.	4,220,487	4,217,560	4,215,907
Dividends on guaranteed and preference stocks	2,430,552	5,056,245	5,883,025
Balance after payment of preference dividends	2,128	Dr. 2,775	2,062
Balance brought forward from previous year	83,926	86,054	83,279
Balance carried forward to subsequent year	86,054	83,279	85,341

* Other than those included in financial arrangements with Government.

Where it has been decided to proceed with workings which are being constructed under the Railways (Agreement) Act,

1935, and the London Passenger Transport (Agreement Act, 1935, as good progress as possible has been made having regard to the more urgent demands for facilities for Government traffic and materials available. Up to the end of 1940 the total sum expended on all works under the Railway (Agreement) Act, 1935, was £3,123,327 and under the London Passenger Transport (Agreement) Act, 1935, £6,066,343. Of the £5,929,811 deemed to have been borrowed from the Railway Finance Corporation Limited by the company a further £1,000,000 was taken up in 1940 making a total of £5,500,000 so far received. As a result of the preparation of the accounts in condensed form and the suspension of statistical returns it has been impossible to prepare a review of the company's business during the year on the customary lines, and the directors have decided to discontinue its issue for the time being.

* * * *

Southern Railway Company

THE report and accounts of the company, which are again issued in wartime abridged form, confirm the net revenue and dividend announcements contained in the preliminary statement. The directors show that net revenue for the year 1940 was £6,755,790, compared with £6,742,576 for 1939. The balance available for dividend on the ordinary stocks was £1,864,888 against £1,876,501. As stated in THE RAILWAY GAZETTE of February 21, a final dividend of 2½ per cent. making 5 per cent. for the year is being paid on the preferred ordinary stock and 1¼ per cent. for the whole year is being distributed on the deferred ordinary stock, leaving a balance of £91,930 to be carried forward. Dividends for the past ten years are given below :—

	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940
	%	%	%	%	%	%	%	%	%	%
Pref. ordinary ...	4	1	3	4	5	5	5	5	5	5
Def. ordinary ...	nil	nil	nil	nil	nil	½	1¼	nil	1¼	1¼

The directors report that the financial arrangements for wartime control have been the subject of further discussion as to details and are now embodied in a draft agreement. One of the main parts of this draft agreement is affected by the contributory insurance scheme in the War Damage Bill. If the Bill becomes law, it will entail negotiations between the Minister, the main-line companies, and the London Passenger Transport Board, for some revision of the agreement as from January 1, 1941, and it is expected that these will shortly ensue. In agreement with the Government, the financial accounts for the year ended December 31, 1940, have been closed on the basis on the draft agreement which provides, *inter alia*, that the cost of war damage within a limit of £10,000,000 in any year chargeable to the pool account shall be spread equally over 13 four-weekly periods beginning with the four-weekly period in which the damage was suffered, and the pool account for the year 1940 has been charged accordingly. In the following table the chief financial items of the company for each of the past three years are summarised :—

	1938	1939	1940
	£	£	£
Total expenditure on capital account	173,589,283	174,430,455	174,834,658
Joint lines—Company's proportion of net revenue	Dr. 47,422	Dr. 36,696	Dr. 40,368
Miscellaneous receipts (net)	1,219,724	*161,809	*185,989
Net revenue	5,941,904	6,742,576	6,755,990
Interest on loans and debenture stocks, etc. ...	1,943,167	2,209,730	2,243,167
Dividends on guaranteed and preference stocks	2,751,278	2,751,278	2,751,278
Balance after payment of preference dividends	1,247,459	1,781,568	1,761,345
Dividend on ordinary stocks	1,379,330	1,772,958	1,772,958
Rate per cent—			
Preferred ordinary	5	5	5
Deferred ordinary	Nil	1¼	1¼
Surplus or deficit (+ or −)	−131,871	+,8610	−11,613
Balance brought forward from previous year...	226,804	94,933	103,543
Balance carried forward to subsequent year ...	94,933	103,543	91,930

* Other than those included in financial arrangements with Government.

During the year a further sum of £929,811 was borrowed from the Railway Finance Corporation Limited by the company under the provisions of the Railways (Agreement) Act, 1935. With previous amounts received, this makes up the total sum agreed to be taken, £5,929,811. There is a contingent liability in respect of the actuarial valuation of the superannuation funds, and the annual provision recommended by the actuary has been made. Among the miscellaneous receipts of £28,196 are included profits of £5,475 from Carter Paterson & Co. Ltd., against £14,963 for 1939, and £22,721 from Hay's Wharf Cartage Co. Ltd., compared with £24,733.

Central Argentine Difficulties

OF all the Argentine railways, none has been so severely hit by the slump in grain traffic as the Central Argentine. It runs through the heart of the grain belt, and the bulk of its receipts are therefore derived from cereal traffic, and particularly maize, of which in a good year and under normal conditions the railway has frequently carried upwards of 5,000,000 tons. This year, as the result of the almost complete paralysis of grain traffic, it is estimated that there are 4,000,000 tons of maize immobilised in the zones served by the company. The freight on this quantity would amount to some 22,000,000 pesos, a sum of which the company is deprived owing to the slump in exports. The loss on working from July 1 to mid-November amounted to well over 10,500,000 pesos, as compared with the corresponding period of 1939-40. As the average gross revenue for the corresponding period during the five years 1935-39 was approximately 40,000,000 pesos, the drop in the company's earnings is equivalent to 35 per cent.

In view of the gravity of the situation, which is unparalleled in the company's history, the management has issued a memorandum to the staff clearly setting forth the railway's financial position, and intimating that it may be necessary to defer the payment of salaries and wages in order to purchase fuel and other essential materials. In view of the continuous drop in the receipts, the company was obliged to reimpose the wage-cuts, which were gradually increased, as the situation worsened, from 3·3 to 4·95 and eventually to 8·25 per cent., a measure which caused discontent among some of the staff, who showed their dissatisfaction by organising stoppages of work, although these were not serious enough to interfere with traffic working. The circular to the staff points out that during the July, August and September quarter of 1940, the monthly receipts have averaged only $6,585,000, of which sum $5,000,000 has been absorbed by the salaries and wages of the company's 27,000 employees. The balance of $1,585,000 did not suffice to cover the cost of the fuel and materials required for the operation of the line, and fuel alone absorbed $1,450,000. Moreover, since December, 1939, the gross receipts have not sufficed to pay the interest on the debentures, thus forcing the company for the first time in its history to ask for a moratorium. Reference is also made to the fact that the ordinary shareholders, representing one-half of the company's total capital, have received no dividend for ten years.

After explaining the circumstances which have brought about this state of affairs, the circular states that the management will spare no effort to maintain its tradition of scrupulous punctuality in the payment of salaries and wages, but it has been considered necessary to acquaint the staff with the real situation, and appeals for its goodwill and co-operation to enable the company to emerge successfully from its present difficulties. It was a wise policy on the part of the management to take the staff into its confidence, and the fact that the company should have to contemplate the possibility of such an unprecedented step as the deferring of the payment of salaries is proof of the gravity of the situation and of the urgent need for such slight alleviation as would be afforded by an all-round increase of 5 per cent. in the tariffs, which the companies solicited some time ago, but which has not yet been granted.

COAL TRANSPORT DIFFICULTIES IN THE TRANSVAAL

Calls upon wagon supplies arising from the war are common to many parts of the world and one of the traffics which is most adversely affected is coal. This condition apparently obtains in South Africa, for Mr. W. L. Castleden, Chairman of the Tweefontein Colliery Limited, at the annual meeting of the company on February 26, referred to the effect of it on the coal trade of the Transvaal. He pointed out that production continued to expand but that unfortunately the collieries were prevented from taking full advantage of the increasing demands for coal because of the shortage of supply of railway wagons which was attenuated by the prior claims on the railways by the Defence Department of the Union of South Africa for transport for war purposes.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Public Relations

Waterloo Station, S.E.1
February 26

To the Editor of The Railway Gazette

Sir,—Under the heading "Public Relations," an article by Mr. George Dow, Information Agent of the L.N.E.R., appeared in your issue for February 14. In it appeared the following paragraph:—

"On the L.N.E.R. the maintenance of successful public relations is pursued along two principal avenues, viz., by direct contact on the part of the staff and by indirect contact through the medium of news, information, and publicity (not to be confused with advertising) in the press, in periodicals ,and, to a lesser degree, on the radio and films. *Upon the results of these two methods of public approach largely depends the success or failure of the press and poster advertising campaigns of the Advertising Manager.*"

This last sentence no matter whether intentional or otherwise is totally incorrect, as it suggests that press and poster advertising is dependent on relations with the public.

There are innumerable firms who sell vast quantities of goods through press and poster advertisements with negligible public contacts.

The very fact that the L.N.E.R. divides the two functions would lead one to suppose that his management does not share his views.

The sentence implies that the railway's unusually fine trade advertisement sites, which form a valuable by-product, have to be backed by public relation efforts. Such a statement or implication is damaging to that side of the railway company's business which happily survives by its efficiency and proved value in spite of fierce competition and criticism.

Yours faithfully,
CUTHBERT GRASEMANN,
Public Relations & Advertising Officer, Southern Railway

As the above letter was received just too late for insertion in last week's issue, a proof was sent to Mr. Dow and his reply is as follows:—

H Q 1 (via Hitchin), February 28

To the Editor of The Railway Gazette

Sir,—In view of Mr. Grasemann's dual capacity I am astonished at the categorical pronouncement contained in the third paragraph of his letter. It would not, I think, have been uttered had he not made the error of classing himself with the Advertising Manager of a firm selling, for instance, canned peas or corsets, as is implied in the fourth paragraph of his letter.

I would suggest to Mr. Grasemann that in his second capacity he is concerned with selling an intangible commodity called "service" and this he assuredly cannot do successfully unless it is being provided by the staff, especially the public contact staff of his railway, no matter how brilliantly conceived and executed are his press and/or poster advertising campaigns.

As I see it, the true prestige of a railway is reflected in the individual and collective team work of its component departments and I stoutly maintain that a railway Advertising Manager's "canvas" must depend largely upon the "oils" provided by *all* departments—directly, for example, by the Operating, Passenger, Goods, and Hotels Departments, and indirectly by the Public Relations Department.

I will answer Mr. Grasemann's fifth paragraph with most of his own words. The very fact that the L.N.E.R. divides the two functions (of advertising and of public relations) would lead one to suppose that the management fully realises the importance of both.

I do not follow the last paragraph of his letter as my article had nothing whatever to do with trade advertising, my reference to poster campaigns being, of course, to those of the railways themselves and not to those of advertisers on the railways.

Yours faithfully,
GEORGE DOW,
Information Agent, L.N.E.R.

New Railway Network Principles

Meece House, Colmeece,
Nr. Stone, Staffs.
February 20

To the Editor of The Railway Gazette

Sir,—In your issue of February 14 Mr. Charlewood writes about my booklet of the above title. The principles largely realise the ideal of a fast journey from any point to any other point; this solves the problem of cross-country travel for one thing, but also this ideal must include the case of a fast journey from each point in a wide region to where a main line may connect. Thus passengers from Nottingham and district would use the Nottingham—Stoke-on-Trent hour section to catch the down Irish Mail at Crewe. The basic hour section network is schemed out to use branch lines with numerous new connections and rectifications (requiring much constructional work admittedly) but so as to involve the principal main lines as little as possible. These are left much clearer for fast running.

This point is clear to Mr. Charlewood. I cannot improve on his way of stating that service builds up traffic, and shall pass on to his other points. Where two hour sections join and part coincide, the double line might be worked as two single lines permitting both hour expresses to arrive simultaneously. Incidentally this would result in train races unless expressly disallowed. Hour sections might be single line when not busy with trains additional to the hour trains; type case Swindon—Southampton. Where traffic requires it hour section trains will continue past hour stations to constitute hourly connecting services; thus from Norwich to Lowestoft.

Now I am taken to task for citing so unimportant a cross-country journey as that from Ashbourne to Scunthorpe and must explain why. Having worked out a complete revised network to demonstrate the new principles, I had to find a way of comparing it with the present network. Firstly I compared a number of journeys between important towns and showed in each case (as listed in the booklet) that the hour section network would give a far quicker timing than the present network. But I continued the comparison for chance selected journeys, and Ashbourne and Scunthorpe are where two halfpennies came to rest when cast on an opened-out map, that being the method of chance selection I used. The argument now is, that since these chance cases show the same improved timing it is general and must include all important cases.

I shall give the chapter on freight in the next edition. But it may interest some readers to work out analogous freight network principles for themselves.

Yours faithfully,
J. F. POWNALL

Publications Received

The Electrical Year Book, 1941. Manchester: Emmott & Co. Ltd., 31, King Street West. London: 28, Bedford Street, W.C.2. 6¼ in. × 4 in. 332 pp. Illustrated. Price 2s. net.—It was with mixed feelings that we received this year's issue of the standard electrical pocket book—mixed in that they took back our mind to the more peaceful days before the war and yet emphasised that some, at least, of our old friends are still going strong and still needed. The compact railway electrification tables are complete up to the outbreak of war, and what can one do more than that? The section on electric traction contains much information and many figures in tabloid form; certain chapters have been revised or amplified an example being the material on the superimposed ripple developed for the remote control of a.c. circuits.

XUM

THE SCRAP HEAP

How does inflation originate? In a discrepancy between what the country spends and what it earns. If you increase purchasing power without increasing production, prices tend to rise all round. And if for war purposes you make huge demands on the national output without curtailing your demands for non-war purposes, this is bound to happen. Therefore to avoid inflation during wartime it is necessary that consumers shall spend less.—*From "The Sunday Times."*

* * *

CANADIAN RAILWAYMEN'S GIFT

After the first cheque had been lost at sea through enemy action, a duplicate cheque for $200 towards the cost of a Spitfire has been received from the Syd White Lodge No. 3 of the Canadian Association of Railwaymen, the headquarters of which are at Winnipeg.

* * *

SINGING LONDON PORTER

A regular traveller is so pleased with the way in which a porter at one of the L.M.S.R. London suburban stations announces its name during the blackout, that he has sent the company five shillings to be handed over to the man. The traveller writes: "Your tuneful porter has set the station name to music and clearly, plainly, and melodiously announces the station as though he were proud of it. . . . Please give him this small gift with my compliments."

* * *

ALWAYS APPLICABLE!

"Due to the pressure and actual necessity for cars in the west for flour and grain, all cars for freight of any description, to be unloaded by the owner or consignee, must be discharged within twenty-four hours of arrival at destination. If not discharged within that time, station agents will collect $2 per day or part of a day that cars are detained over twenty-four hours."

The above paragraph, taken from a circular, was, in fact issued under the date of October 20, 1871, by the Worcester & National Railroad.

* * *

When I joined the London Tramways Company in 1894, anarchists were busy in London trying to blow up public buildings. On my seventh day, February 15, 1894, one wet afternoon, I was conducting a tram from Westminster to Greenwich and sold only one through ticket. As it turned out, the purchaser of the ticket was Bourdin, the man who went up the hill in Greenwich Park to blow up the Observatory and on the way was blown up himself. The ticket I sold him was found, partly burnt, on the body and it was proved that we had carried Bourdin—bombs and all—on my tram.—*From "Pennyfare," the account of the incident by Mr. James Jenner, who has just retired from the London Transport staff.*

ELEPHANT TRAMS

An elephant-drawn tramway is to be built at Port Blair, principal port of the Andaman Islands, in the Indian Ocean, according to a Reuters report.

* * *

DOES HE HAVE RAILWAY VOUCHERS?

A Vichy communiqué stated that immediately on his return from Paris Admiral Darlan went into conference with Marshal Pétain, and that later he saw M. Boutillier, the Vichy Government's Finance Minister. That would be to get his expenses sheet initialled.—*From "The Glasgow Herald."*

* * *

In mountainous country American railroads use detector fences to prevent accidents due to falling rocks or slips in cuttings. They are electrically-charged wire fences such that if the slip breaks one or more of the wires, a relay is released, throwing to the "on" position (or showing a "danger" aspect) signals protecting the line in both directions. This principle has been adopted to a limited extent—but usually with mechanical instead of electrical energy to operate the signals—in the United Kingdom, notably in the Pass of Brander on the Oban line of the L.M.S.R.

* * *

THAT WICKED BRITISH EMPIRE!

Under this heading an American has prepared the following 16 points:—

1. It insisted on settling the Alabama Claims by arbitration.
2. It followed the same vain policy in 1895 about Venezuela.
3. It gave the defeated Boers so crafty a peace that the poor deluded fools fought to stay inside the Empire only a decade later.
4. Its leaders rashly warned the Versailles Peace Conference of the danger of harsh terms to Germany.
5. It cruelly gave Southern Ireland "Dominion Status," shown by this war to mean complete independence.
6. It stupidly presented India with economic independence, so that India now excludes British goods by a stiff hostile tariff and by bounties upon Indian production.
7. It had possession of Egypt and Irak and bungled things so badly that both are now free.
8. In the Ottawa Agreement, which shut Germany out of some of its markets, it had the presumption to copy our protective tariff wall.
9. It offers India self-government as soon as Hindu and Moslem will come to a working agreement.
10. It treated the Arabs so brutally that, the minute war broke out, the Arabs took advantage of a preoccupied Britain to make a truce with the Palestinian Jews.
11. It still has a Naive Faith in Religion, Democracy, and the Rights of Minorities.
12. It is deluded enough to think Right-at-a-Distance worth defending.
13. It has not the wit to shoot, or at least imprison, its Conscientious Objectors. In many cases they are carrying on at their old jobs.
14. It missed its chance to close down Parliament. The windbag institution is still functioning.
15. It is so simple that it tells the truth about its Losses in Air Battles, as our own observers in Britain testify.
16. It refuses to use naval bases in Eire, which had been in its hands for centuries and which would be an enormous help against U-boats and raiders. It allows a vital part of its tiny islands to contract out of any struggle for survival, because Eire wishes it. It swears to its own hurt and changes not.

The writer adds these notes of exclamation:—

What a country!
No wonder Dr. Goebbels gibes at it!



A poster issued by the National Fire Protection Association in the U.S.A., showing the "No Smoking" injunction in 22 languages; we have indicated the languages outside the actual poster

OVERSEAS RAILWAY AFFAIRS

(From our special correspondents)

NEW SOUTH WALES

Record Financial Results

Best results in the history of the New South Wales Government Railways were obtained during the first quarter of the current financial year. Prior to the month of July, 1940, earnings had never exceeded the £2,000,000 mark in any month, but in July, August and September the earnings reached the record totals of July, £2,010,782; August, £2,042,862; September, £2,003,783. Compared with the corresponding quarter of the previous year the results were :—

	July–September quarter		
	1939	1940	Increase
	£	£	£
Earnings ...	5,069,804	6,057,427	987,623
Expenditure ...	3,528,325	3,655,823	127,498

Earnings thus increased by 19·5 per cent. and working expenses by only 3·6 per cent. This is regarded as eminently satisfactory. Earnings increased under all heads, coaching by £183,718, goods by £745,880, refreshment rooms by £33,428 and miscellaneous by £24,597.

Travel of members of the Defence Forces and the establishment of military camps and aerodromes in country centres contributed to the better results.

ARGENTINA

Extension of South American Air Services

To cater efficiently for the growing tendency towards air as opposed to land or sea travel in South America, particularly for longer journeys, the services operated by the different air companies are constantly being increased. As from December 12 last, the passenger service operated by the Pan-American-Argentine Aviation Company between Argentina and the United States *via* Rio de Janeiro and Porto Alegre has been augmented. The new schedule provides for a tri-weekly service in each direction, leaving Buenos Aires on Wednesdays, Thursdays, and Fridays, and returning on Mondays, Tuesdays, and Saturdays. The service already in operation to the U.S.A. *via* Asunción and Rio de Janeiro, leaving Buenos Aires on Sundays and returning on Wednesdays, calling at Iguazú, Curityba and Sao Paulo, is maintained.

The Pan-American Grace Airways service between Buenos Aires and Santiago de Chile has also been augmented from thrice to four times weekly. Altogether 20 passenger aeroplanes now enter and leave Buenos Aires every week.

In July last both the Panair and Panagra Companies increased their services between Argentina and the United States to three (round-trip) services along both the east and west coasts of South America, leaving Buenos Aires every day, excepting Tuesdays. These services connect at New York with the transatlantic air mail lines to Europe, with which they are now the only connecting link since the French air mail service *via* Brazil and Dakar was suspended at the end of June last. Since September 1 last, the flying time by both these companies' lines has been reduced from 4½ to 3½ days, thus bringing Belem on the east coast and Lima on the west coast 24 hr. nearer. The average number of passengers conveyed in both directions is 1,000 a month.

British Standards Committee and "I.R.A.M."

During the recent visit to Buenos Aires of the British Trade Mission, a deputation representing the above committee, consisting of Messrs. M. F. Ryan, Chairman, R. G. Parrott, F. W. Butler, and E. Woodbridge, was received by Lord Willingdon, to whom it presented a report on the work of the committee and its relations with the *Instituto Argentino de Racionalización de Materiales* (known as I.R.A.M.). The report stated that I.R.A.M. owed its inception to its present Director, Engineer Marceliano A. Ceriale, and had made rapid strides during the last five years, being supported by both private and official interests.

The deputation explained that I.R.A.M. was a civil entity, the membership of which embraced both Argentines and foreigners, who were alike represented on its technical committees. The report stated that the Argentine Standard Specifications were prepared by I.R.A.M., which submitted them for fiscalisation and adoption to the National Commission for the Unification of Materials, created by Government Decree in December, 1937.

Standards of Quality Safeguarded

In view of the cosmopolitan nature of commerce in the Argentine Republic, the report stressed the importance of British engineers and traders interested in the Argentine market seeing that their agents enjoyed equality of representation with those of other countries on the I.R.A.M. committees. The report pointed out that Argentine engineers were becoming more and more alive to the benefits of reasonable standards of quality when making important purchases, as against buying on price alone. The object of I.R.A.M. was to draw up specifications to protect the Argentine buyer from being supplied with inferior materials, although naturally they still wanted to purchase in the cheapest market, a point which British manufacturers might consider when forming future export policies. Although British co-operation with I.R.A.M. was satisfactory, there was still room for improvement, and it was hoped that the British Standards Committee would continue to receive the fullest support in endeavouring to attain this end, as it should in time prove mutually beneficial to both Argentina and Great Britain.

CANADA

1940 Traffics

Car loadings of revenue-earning freight on Canadian railways during 1940 were the highest since 1930, the total of 2,812,587 showing an increase of 263,138 or 10·3 per cent. over 1939, and of 379,801 cars, or 15·6 per cent. higher than in 1938. Compared with 1933, the low year of the depression, last year showed an improvement of 780,617 cars or 37·4 per cent. The increase of 1940 over 1939 was mostly made up in the first eight months, the total at the end of the third week in August being up by 250,178 cars, or 16·8 per cent. The light movement of Western grain in the autumn reduced the peak usually reached in September or October, and almost completely offset the increase in the other commodity groups. In the last six weeks of the year, however, good increases were again recorded.

The bulk of the improvement was in loadings of miscellaneous freight, which showed a gain of 103,178 cars, or 17·5 per cent., followed by lumber, which was up by 45,656 cars, or 45·7 per cent. after having had increases over both 1939 and 1938 for every week. Merchandise in less-than-carload lots advanced by 36,537 cars, or 5·6 per cent. and good gains were recorded in loadings of coal, pulpwood, pulp and paper and ore. Ore loadings were the heaviest in history, lumber shipments were the largest since 1929, less-than-carload lots loadings the greatest since 1930, and miscellaneous loadings were, with the exception of 1937, the largest since 1930.

CHINA

Chinese Wreck Train near Soochow

On November 29, the 7 a.m. train from Shanghai to Nanking was mined near Soochow, 73 passengers being killed and 200 injured. The demolition is stated to be the work of a captain in the army of Chiang-kai-Shek and a squad of sappers under him. The Shanghai—Nanking line is a section of the Japanese-controlled Central Railway. The administration of this railway is said to have promised compensation to the families of the killed and to the injured. The Japanese authorities, however, burnt all the neighbouring villages as the villagers were supposed to have helped the demolition party.

First 100 miles of Kunming—Suifu Line Opened

The first two sections of the Kunming (Yunnanfu) to Suifu (Szechwan) Railway, from Kunming to Yangling and Yangling to Chutsing or Kütsing (Chuchingfu), a little over 100 miles of line, are now open for traffic. A regular train service is in operation,

and the line closely follows the motor road through fairly easy country. This is the first 100 miles of the future great trunk line from Rangoon to Chungking—about 1,650 miles in length—to be brought into use. More exactly, it is the first 100 out of the (about) 950 miles of line at present under construction by the Chinese Government to connect the Burma frontier near Kunlong ferry on the Salween river—100 miles east of Lashio, the railhead of the Burma Railways—with Suifa on the Yangtze, 150 miles above Chungking. Construction was begun about two years ago.

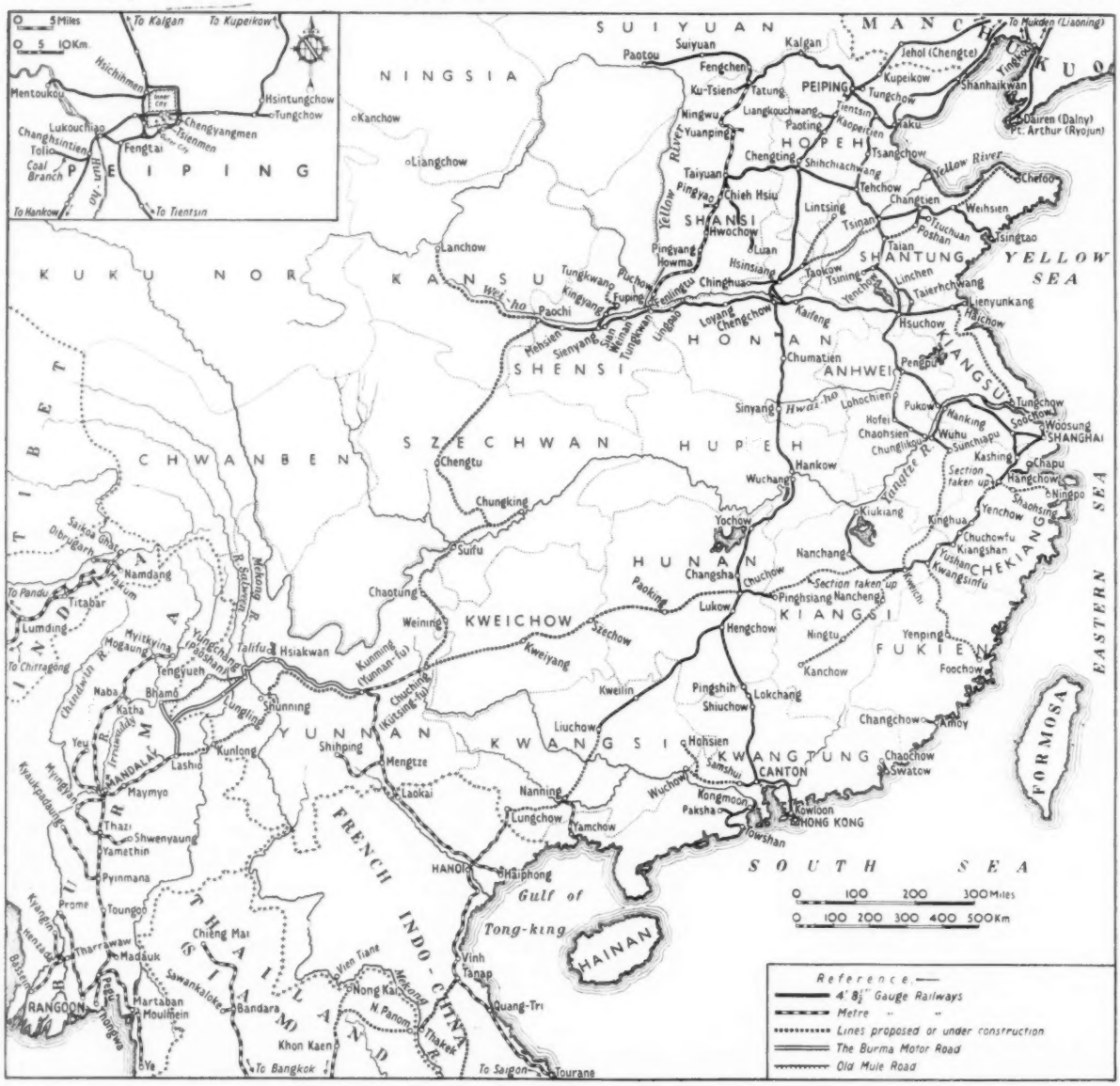
New Railways Recently Opened

In addition to the completion of the first 100 miles of the Kunming—Suifu line in Yunnan, two other railways have recently been built and opened for traffic. They are the Tungkuanchen—Taiku—Luan and Tatung—Ningwu lines, both in Shansi.

The Tungkuanchen—Luan line connects the latter town with Taiyuan and has been built mainly for military reasons. It is about 150 miles in length, and the southern end of it had to be constructed through mountainous country with some difficulty.

The Tatung—Ningwu is the final section built to complete the whole Tatung—Puchow Railway, a north-to-south line linking up the Peiping—Kalgan—Suiyuan Railway at Tatung with the Lung—Hai Railway just south of Puchow, and running the length of western Shansi through its capital Taiyuan. Both these constructions were completed under Japanese auspices, though the Tatung line was conceived long ago by the Chinese.

Another railway recently constructed under Japanese auspices is the Sinsiang—Kaifeng loop line. Originally the Lung—Hai and Peiping—Hankow lines intersected at Chengchow on the south bank of the Yellow river. Recently, however, two considerations have arisen necessitating a change. The Japanese have occupied both Sinsiang and Kaifeng but Chengchow, the western part of the Lung-Hai line from Chengchow to Sian and beyond and the northern part of the Hankow line from Chengchow remaining in Chinese hands. Also the Yellow river changed its course and broke through the line between Chengchow and Kaifeng. A loop or chord line along the north-east bank of the river was, therefore, essential to maintain adequate Japanese communications between the Peiping-Sinsiang and Kaifeng-Hsuchow sections.


SUIYUAN
MANCHUKUO
NINGSIA
PEIPING
HOPEH
SHANSI
SHANTUNG
YELLOW SEA
KUKU NOR
KANSU
HONAN
SHENSI
ANHWEI
KIANGSU
SZECHWAN
HUPEH
CHWANBEN
HUNAN
KIANGSI
CHEKIANG
FUKIEN
KWEICHOW
YUNNAN
KWANGSI
KWANGTUNG
TIBET
INDIA
BURMA
THAILAND
FRENCH INDO-CHINA
EASTERN SEA
SOUTH SEA
FORMOSA
HAINAN
Gulf of Tong-king
Paotou
Suiyuan
Kalgan
Jehol (Chengte)
Kupeikow
Shanhaikwan
Tientsin
Tangku
Tsangchow
Tehchow
Changtien
Weihsien
Tsingtao
Taian
Linchen
Taierhchwang
Lienyunkang
Haichow
Hsuchow
Pengpu
Woosung
SHANGHAI
Nanking
Wuhu
Hofei
Chaohsien
Suchiapu
Kashing
Chapu
Hangchow
Ningpo
Shaohsing
Yenchow
Kinhua
Chuchowfu
Kiangshan
Tushan
Kwangsinfu
Yenping
Foochow
Amoy
Changchow
Swatow
Chaochow
Kowloon
HONG KONG
Canton
Samshui
Wuchow
Hohsien
Liuchow
Kweilin
Pingshih
Shiuchow
Lokchang
Kanchow
Ningtu
Nanchang
Kiukiang
Yochow
Hankow
Wuchang
Chungking
Chengtu
Sinyang
Lohochien
Pukow
Tungchow
Suchow
Kaifeng
Chengchow
Loyang
Sian
Weinan
Tungkwan
Lingpao
Tungkwanchen
Chinghua
Tsining
Yencheng
Taokow
Hsinsiang
Pingyang
Howma
Lanchow
Paochi
Mehsien
Sienyang
Chumatien
Hwochow
Chieh Hsiu
Taiyuan
Pingyao
Yuanping
Ningwu
Liangchow
Kanchow
Liangkouchwang
Paoting
Kupeikow
Tatung
Ku-Tsieng
Kalgan
Suiyuan
Paotou
Fengchen
Tungkwan
Puchow
Kingyang
Fuping
Teslingtu
Yellow River
Wei ho
Hwai ho
Yangtze R.
Section taken up
Section taken up
Section taken up
Chuchow
Paoking
Lukow
Hengchow
Pinghsiang
Nanchang
Kweiyang
Szechow
Weining
Kunming (Yunnan-fu)
Chuchiang (Kiatsing-fu)
Talifu
Hsiakwan
Yungchang (Baoshan)
Tengyueh
Mogaung
Myitkyina
Lumding
Tezpur
Namdang
Saikia Ghat
Dibru R.
Brahmaputra R.
Chindwin R.
Irrawaddy R.
Salween R.
Mekong R.
Red R.
Shunning
Lungling
Naba
Bhamo
Katha
Yeu
Kunlong
Lashio
Shihping
Mengtze
Laokai
Maymyo
Mandalay
Thazi
Shwenyaung
Yamethin
Pyinmana
Prome
Toungoo
Kyaukpadaung
Myingyan
Chieng Mai
Tharrawaddy
Madauk
Sittang R.
Irrawaddy R.
Martaban
Moulmein
Sawankaloke
Bandara
Khon Kaen
To Bangkok
Nong Kai
N. Panom
Thakek
Vien Tiane
Mekong R.
Vinh
Tanap
Quang-Tri
To Saigon
Tourane
Haiphong
HANOI
Lungchow
Yamchow
Nanning
Wuchow
Paksha
Tolwshan
Kongmoon
Shiuchow
Changchow
Amoy
Foochow
Yenping
Ningtu
Kanchow
Pingshih
Lokchang
Liuchow
Kweilin
Hengchow
Lukow
Paoking
Chuchow
Changsha
Yochow
Hankow
Wuchang
Chungking
Chengtu
Kiukiang
Nanchang
Kinhua
Yenchow
Shaohsing
Ningpo
Hangchow
Kashing
Chapu
Woosung
SHANGHAI
Nanking
Wuhu
Hofei
Chaohsien
Suchiapu
Tungchow
Suchow
Pukow
Lohochien
Sinyang
Hwai ho
Yangtze R.

PEAT SUBSTITUTE FOR LOCOMOTIVE COAL IN IRELAND

Experiments with home-produced fuel

FOR the past few months the Great Northern Railway (Ireland) has been carrying out experiments with a view to establishing with what success peat could be used as a locomotive fuel, either (*a*) as a substitute during a national emergency, when imports of coal might be curtailed or altogether cut off, or (*b*) possibly as a more permanent measure on certain sections of the line, where local supplies of peat and general conditions of traffic might make economically feasible the use of such a fuel.

The use of peat in locomotive practice is by no means new; it was tried in Sweden for locomotive firing as far back as 1911, when a great deal of valuable experimental work was done; the results of the tests carried out then do not fall very wide of those preliminary figures now obtained by the G.N.R.(I.). The Swedish State took a considerable interest in the development, and granted upwards of £100,000 for its fostering. The greatest activity in this direction took place between 1918 and 1921, a significant factor, as this period followed the war, and in 1921 no less than 73,000 tons of peat was used as locomotive fuel in Sweden, by far the greater portion of this being used in the form of ordinary sod peat, and only a small portion in pulverised form.

It was, therefore, with this background that the G.N.R.(I.) experiments, which are still only in their infancy, were begun in the late spring of 1940. It is stressed that the following information, due to the, as yet, incomplete stage of the trials, must be very general.

The first task was to establish a true basis of comparison between peat and coal. For this purpose a 4-4-2 tank locomotive was selected and fitted out as a mobile test unit wherein such fundamental data relating to boiler efficiency as flue-gas temperatures and composition, conditions of draught, and temperature of steam, could be established in a more or less continuous manner during the various test runs, so that, with a knowledge of the ultimate analysis of any fuel burnt, a complete heat balance covering each test could be worked out. Parallel heat-balanced runs, therefore, with peat and coal as fuel, permit a close comparison of efficiencies to be made. The fact that the tests have to be carried out under footplate conditions presents a number of difficulties as compared with similar testing of stationary boilers, and definite conclusions cannot easily be arrived at owing to the rapidly fluctuating steam output from time to time during each test run, and to such factors as the difficulty of co-ordinating the effect of variations in load, weather conditions, etc., as between test and test. The following preliminary conclusions have been formed:—

(1) It is perfectly feasible for peat to be burned efficiently in a locomotive boiler.

(2) The low ash content of the fuel leads to a comparative absence of clinker troubles and to relatively high grate efficiency.

(3) The degree of superheat obtainable with peat as a fuel is somewhat higher than with coal.

(4) As the sulphur content is very low, this should lead to reduced maintenance on tubes, etc.

On the other side of the balance sheet certain disadvantages exist, such as (1) low bulk density, leading to reduced carrying capacity for a given tender space, (2) a high water content of the fuel, resulting in increased flue gas heat losses, and (3) increased labour on the part of the firemen to maintain a given output of steam due to the low calorific value of peat. At the moment, machine-cut peat only has been used, and no attempt has been made to carry out any major re-design of the locomotive.

There is, of course, no doubt that the ideal way in which to introduce peat fuel into the firebox would be in an air-carried pulverised form, and it is hoped that before the experiments reach finality, it will be possible to embrace this method of firing within the compass of the tests. All that can really be said at this time is that the experiment is not without promise that, at least under Irish conditions, peat may be found to be quite an efficient substitute fuel.

It need hardly be added that the first essential must, of course, be an adequate supply of peat of suitable dryness and of good quality otherwise, and at an economic price, especially as the calorific value of peat solids (namely, 100 per cent. dry peat substance) does not greatly exceed 9,000 B.T.U's a lb.

THE RAILWAYS OF CHILE

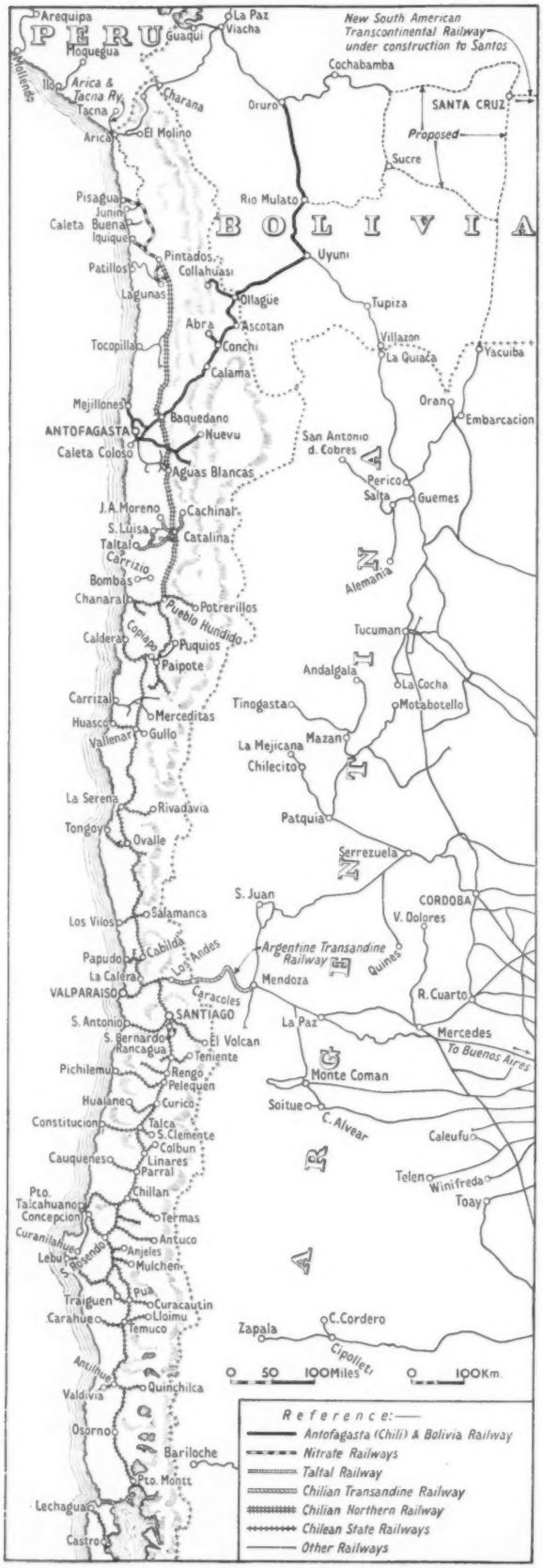
Some notes and statistics on the railway system of this long and narrow country

THE first railway to be built in Chile, and indeed, in any South American republic, was the standard 4 ft. 8½ in. gauge line from Caldera to Copiapó, 51 miles, opened in 1850. It was surveyed and built for a group of mining companies by the American engineer William Wheelwright, whose name, together with that of his fellow-countryman, Henry Meiggs, is connected with so many early Chilian enterprises. Shortly afterwards, in 1852, the broad gauge (5 ft. 6 in.) line between Valparaiso and Santiago was begun. This line also was based on plans submitted by Wheelwright. It was first proposed in 1842, but finance was lacking until a company could be formed with State backing. Finally, it was inaugurated by President Montt with great ceremony on September 14, 1863, and this line, 114 miles in length, between the port of Valparaiso and the capital city of Santiago, was the nucleus of what was to become the State Railway system. Already the broad gauge line had been continued southward from Santiago, to San Bernardo in 1857 and Rancagua, 53 miles, in 1859. Construction was continued by the State, reaching Curicó, 115 miles, in 1868.

In 1873 a definite form was first given to the proposals for a "longitudinal" railway. The Republic of Chile occupies the long and narrow zone between the Andes range and the Pacific ocean. Its width at the widest part is little more than 200 miles while in places it dwindles to 60. The railway system therefore necessarily takes the shape of a north and south longitudinal line, with lateral branches to the mining regions in the east and to the coast ports on the west. The Republic has an area of 289,796 square miles, or more than double that of the British Isles, and its population is now approximately 4,500,000.

The decision in 1873 was to continue the southern section as far as Puerto Montt and to construct a northern line from a point at Calera, near Valparaiso, northwards to Pintados. This great longitudinal line, 1,848 miles in length, from Puerto Montt in the south, through Santiago, to Pintados in the north, is the principal feature of the Chilian railway system. Although the broad gauge was adopted for the southern section and it was at first proposed to construct the northern section on the same gauge, the mountainous nature of the country, and the effect of this on the cost of construction, finally led to the decision to build the latter on the metre gauge. Eventually the northern system was formed by linking up various short lengths already constructed, the first of these being the Calera-Cabildo line, started in 1888 and finished in 1898.

Nearly all the southern section and the central part of the northern, as far as Pueblo Hundido, are owned and worked by the State, or rather more than half the total mileage in the country. From Pueblo Hundido northward the continuation is by way of the Northern Longitudinal line, 443 miles of metre gauge. The concession for this line is owned by the Chilian Northern Company, and it is operated by the Anto-



fagasta (Chili) & Bolivia Railway Co. Ltd. In the extreme north there is the international line from Arica to La Paz, 128 miles of which, on the metre gauge, are in Chilian territory. This railway was constructed in accordance with the Peace Treaty of 1904 with Bolivia. It was formally inaugurated in 1913.

The Chilian railway system shows a diversity of gauges. Throughout the south the broad gauge is general, but north of Valparaiso the principal trunk lines are on the metre gauge, and on the privately-owned railways there is no uniformity at all. The following table shows the mileage open on the different gauges, as nearly as can be ascertained from the latest available sources :—*

—	1·68 m. 5 ft. 6 in.	1·45 m. 4 ft. 8½ in.	1·067 m. 3 ft. 6 in.	1·0 m. 3 ft. 3⅜ in.	0·76 m. 2 ft. 6 in.	0·60 m. 2 ft.	Totals
State Railways							
Southern section	1,811	—	—	140	—	237	2,188
Northern section	—	—	—	1,046	—	—	1,046
	1,811	—	—	1,186	—	237	3,234
Chilian Northern...	—	—	—	443	—	—	443
Iquique-Pintados ...	—	—	—	131	—	—	131
Arica-La Paz (Chilian Section) ...	—	—	—	128	—	—	128
Transandine ...	—	—	—	44	—	—	44
Private railways ...	86	433	333	674	220	—	1,746
	1,897	433	333	2,606	220	237	5,726

Although the first railway in Chile, that of Caldera to Copiapó, was constructed by private enterprise, there was little increase in the mileage of privately-owned lines until the eighteen-eighties, when British interests undertook the development of the nitrate industry. This led to the construction of the Iquique line (Nitrate Railways), that of Tocopilla, the Taltal Company's line, and that of the Antofagasta-Bolivia Company, all built about the same period. The Transandine was also a private enterprise, but is now controlled and worked by the State. The first electrification in Chile dates back to 1924, when the 114-mile Valparaiso—Santiago section was converted. Now there are some 257 miles of electrified line on the State system alone, and as we recorded in our issue of October 18, 1940, the 70-mile Santiago—San Antonio line is now to be electrified on the 3,000-volt d.c. system, in keeping with the contiguous Valparaiso electric line.

The Chilian State Railways are operated by the Empresa de los Ferrocarriles del Estado, an autonomous corporation under a General Manager appointed by the President of the Republic. The Empresa works on commercial lines and reports to the Minister of Fomento. A fixed annual quota of 7 per cent. of the railway gross earnings is earmarked for the National Treasury. Certain coastwise shipping services have recently been taken over by the Empresa. The principal statistical figures from the report for 1939, compare with those for 1938 as follow :—

	1938	1939
Length of open lines	5,653	5,769
Train kilometres	15,986,453	16,017,265
Passengers, number	18,179,371	17,193,596
Passenger kilometres	1,152,252,645	1,183,372,595
Goods, tons	7,165,920	7,171,616
Goods, ton-kilometres	1,545,432,870	1,639,324,600
Working ratio (including depreciation, financial charges, pensions, etc.)	97·3 per cent.	100·8 per cent.
	pesos	pesos
Passenger receipts	122,974,534	146,573,528
Goods receipts	278,724,084	319,987,336
Gross earnings	424,933,633	511,650,207
Expenditure (including depreciation, financial charges, pensions, etc.)	413,374,657	515,792,379
Surplus (+) or deficit (−)	+ 11,558,975	− 4,142,172

The working of the State Railways was seriously affected in 1939 by the earthquake which devastated part of the southern region on January 24 of that year. Many bridges were damaged, some 250 km. of track were deranged, and traffic was wholly suspended on several sections for varying periods. The loss caused by the earthquake is estimated at 60,000,000 pesos.

Notwithstanding the serious effect of the disaster on traffic, increased receipts were shown both by passenger and by goods traffic. The programme of modernisation carried out in

(*Continued at foot of page* 256)

* "Monografia de los Ferrocarriles de Chile," by L. E. Guillen, 1939

ELECTRIC TRACTION SECTION

An English Bogie Locomotive

WE have never been greatly in love with the ordinary double-bogie Bo – Bo or Bo+Bo electric locomotive for passenger service, and more than once we have inveighed against the type. We still do not think, despite the numerous advances which have been made in the design and arrangement of bogie centres, suspension, and weight distribution, that heavy locomotives of this type are the best or most efficacious that can be devised for passenger trains running at over, say, 50 m.p.h. Nevertheless, we must chronicle the advent of a further development in locomotives of this wheel arrangement, the developments being in the directions of weight and power. The first of the L.N.E.R. locomotives just completed for working passenger and freight trains on the Manchester-Sheffield line has a greater weight—88 tons—than any other Bo+Bo locomotive of which we have heard, and a one-hour output—1,868 h.p. at 26 m.p.h.—which is not quite equal to the maximum of which we have knowledge. Further unusual features, referred to in the description of the locomotive given on another page, are the counteracting of the axle-load alteration by electrical means; the length of the locomotive—50 ft. 4 in.; and the long bogie wheelbase of 11 ft. 6 in. Speeds up to 65 m.p.h. are contemplated with this locomotive, the first of 70 ordered.

Sleet on Catenary Lines

THE extraordinary weather conditions from which New York suffers in both summer and winter bring unusual and often severe operating conditions to the railways running into Manhattan, Long Island, and the New Jersey side of the river, and a typical instance is the formation of ice and sleet in large quantities on the overhead lines of the a.c. electric railways. The formation is particularly troublesome on the New York Connecting Railroad, where for two miles on each side of the celebrated Hell Gate bridge this quadruple-track line is laid on viaducts high above all the neighbouring structures, and so is in a most exposed position. The method adopted to keep the h.t. transmission lines and contact wires in constant use during bad sleet storms is to exchange power between two sources, as detailed elsewhere in this issue. With this procedure the power used in melting the sleet is very small, and the extra current in the rails, which are not ordinarily involved in a power exchange, is not enough to cause serious disturbance by induction in adjacent railway and commercial telephone circuits.

A Swiss Post Office Railway

AN underground electric railway of the same general type as that used in London by the British G.P.O. was opened in Zurich during last summer by the Swiss Postal and Telegraph Department, and extends from the head post office by the River Sihl to the main Zurich station, a distance of a little over 1,100 yd. There is only one track, and a driverless electric truck runs to and fro between the two termini; it is set in motion by pressing a push button on the main control panel. Current is on the three-phase 50-cycle 220-volt system, and to reverse the direction of travel of the train it is only necessary to change over two phases of the supply. One phase of the system is connected to earth (the track) and a separate secondary winding is provided on the transformer for the supply to the motor track. Two three-phase induction motors are used on the four-wheel mail truck: the first is of 3·5 h.p. and operates through gears, driving the vehicle at a speed of 9¾ m.p.h.; the second motor drives the other axle and is used only when the slow speed—about 0·7 m.p.h.—is required. There are two conductor rails formed of copper bars. The truck leaves the terminus at the low speed, and as soon as it is off a third conductor rail length it is automatically switched over to the higher speed; near the other end the truck runs on to a dead section and a mechanical brake is applied until the other third rail section is entered and the lower speed comes into operation. The truck runs on to a lift at the end of the run and this is raised automatically as soon as the truck is safely on it. The single mail truck in service at the moment makes about 80 return trips a day with a maximum load of 550 lb., and the running time including the lift operations is approximately 2½ min.

Continental Electrification

DESPITE difficult conditions, railway electrification is still being carried out in Scandinavia and Switzerland. On the Swedish State Railways the 57-mile Långsele—Mellansel line was turned over to electric traction on September 20 last, and conversion work is proceeding on the 75-mile Mellansel—Vännäs section; electrification from Vännäs on to Boden, on the Riksgränsen line (Lapland Iron Ore Railway) will follow, and the whole of the northern trunk line from Stockholm to Lapland will then be worked electrically. Conversion work on the Ostfold line of the Norwegian State Railways—from Oslo to Kornsjö on the Swedish frontier—was resumed after a short interruption after the invasion, and electric trains have been running from Oslo as far as Sarpsborg, 68½ miles, since July 20 last. The section from the frontier at Kornsjö to Halden was being worked electrically before the invasion, and conversion of the 17-mile intervening stretch between Sarpsborg and Halden was scheduled for completion by the beginning of this year. Recent Danish State Railways orders include one for six 1,500-volt d.c. electric locomotives, placed with Frichs; hitherto the State electric lines have had only multiple-unit trains. New conversion schemes on the Swiss Federal Railways include the 13-mile Oerlikon—Wettingen line, which will enable electrically-hauled trains from north-east Switzerland to join the Basle or Olten lines without reversing at Zurich; and the 21-mile line from Auvernier junction to the French frontier at Les Verrieres (Pontarlier route). Work is still proceeding on the metre-gauge Brünig line from Lucerne to Meiringen and Interlaken, a route mileage of 46.

Energy Costs

THE large number of instances in which electric energy for rail traction is cheaper per ton-mile than the cost of coal per ton-mile moved by steam locomotives, has led to a general belief that such a saving is axiomatic, but it is well to be reminded occasionally that this is not so. The cost of water itself being nil, hydro-electric stations are often put forward as the classic examples of power for very little, if not for nothing, but the very high capital charges generally associated with the formation of the dams, pipe lines, and the generating machinery frequently bring the cost per kWh up to a figure which shows no appreciable difference from the fuel cost of steam operation. Similarly with steam stations, where the high thermal efficiency of the steam generating process may be offset by the fixed charges on an enormous capital expenditure, a state of things which the grid has done nothing to alleviate. Moreover, an appreciable increase in the energy bill may result from any sudden and large increment in traffic, by reason of the maximum-demand clause in most power contracts. It should always be remembered that electrification of railways is primarily a traffic measure, and not a means of saving fuel, and that an increase in fuel or energy charges may easily be justified if conversion gives other outstanding advantages. For instance, although the fuel and energy charges per ton-mile with steam and electric traction may be equal, steam methods may not be able to haul all the traffic offered, and in any case can scarcely work as great a density of traffic as electric traction with anything like equal punctuality.

NEW L.N.E.R. ELECTRIC LOCOMOTIVE

Several unusual and interesting features characterise what is only the second main-line electric locomotive ever built for use in this country

ONE of the first visible signs of the big Manchester-Sheffield electrification scheme inaugurated before the war by the L.N.E.R. is the completion of the first of 70 double-bogie mixed-traffic locomotives, the mechanical portions for which were ordered from the company's Doncaster works and the electrical equipment from the Metropolitan-Vickers Electrical Co. Ltd. The coming of the war resulted in the suspension of most of the conversion work, but a decision was made to proceed with one locomotive, so that it could be tried out thoroughly on a short section of line equipped with a 1,500-volt d.c. catenary system.

This particular design was evolved under the direction of Sir Nigel Gresley, the Chief Mechanical Engineer, and Mr. H. W. H. Richards, the Electrical Engineer, to handle both passenger and freight main-line trains over the Pennines, and up and down long 1 in 100 grades, as well as to operate local services. Top speeds up to 65 m.p.h. are contemplated. In size and weight the locomotive is among the largest Bo+Bo type ever built, with a maximum axle load of 22½ tons and power equipment which can make proper use of that weight, particularly at medium speeds.

Mechanical Portion

The steel body and girder underframe are carried on two four-wheel bogies on which are mounted the buffing and draw gear. Pull-and-push articulated connections between the inner headstocks of the two bogies keep all the buffing and drag stresses away from the body, and put the plus sign into the wheel notation. The 50-in. wheels are spread over the long bogie wheelbase of 11 ft. 6 in., but nevertheless 5-chain curves can be traversed. The weight of the body is not transferred to the bogies through the central pivots, but through four concave-convex side bearers on each bogie supported by helical steel springs; the centres are for pivoting only, but have been given a small amount of spring-controlled side play. Plain outside axlebox bearings are used in the locomotive just completed, and these have stiff 18-plate overhung laminated springs with rubber auxiliaries. The bogie frames are of steel plate, but throughout the bogie, body, and underframe structures welding has been used but sparingly, and the construction generally is by riveting.

Westinghouse brakes are used for the locomotive, and apply two blocks on each wheel through clasp rigging. A hand brake is incorporated also, with a horizontal wheel in each driving cab; vacuum apparatus, including a Northey-Boyce motor-driven exhauster, is installed to operate the brakes on passenger and fitted freight trains. The self-lapping driver's brake valve applies simultaneously the air brakes on the locomotive and the vacuum brakes on the train. Pneumatic sanding apparatus is fitted to the front and back of all wheels.

In addition to a driving compartment at each end, the body may be said to have five compartments and a corridor down one side. There are two auxiliary equipment spaces, one resistance chamber, one h.t. control compartment, and the train-heating boiler room. Each driving cabin has a control table stretching the full width of the locomotive, but the driving position itself is to the left-hand side in each case. Hand-operated window wipers are provided, and other equipment includes a hot plate for the driver's meals and a Flaman recording speedometer driven from the end of one axle. A Klaxon type warning horn is fitted on the roof at each end.

Electrical Equipment

Current is collected from the overhead line by two pantographs of lightweight but rigid design. The lower side members are not of the usual tubular shape but are of light beam form; the top side members are tubes, but it has been deemed unnecessary to use more than one top diagonal bracer on each end of the structure.

Taken generally, the control gear is of the electro-pneumatic unit switch type installed by Metro-Vick in the Polish locomotives (*Electric Traction Supplement*, January 7, 1938) and in the latest South African locomotives (*Electric Traction Supplement*, July 23, 1937). Remote control of the electro-pneumatic contactors and drum-type switches for reversing, etc., is carried out by 50-volt circuits from the master controller, the current being obtained from one of two 5-kW motor-generator-blower groups. In the event of failure of the motor-generator set, current for lighting and control is furnished by a 40 amp. hr. 33-cell nickel-iron battery which is normally charged by the set.

The 36 main and other boiler and auxiliary contactors are located in a h.t. compartment, and are mounted and arranged cross-wise in an extraordinarily neat and compact manner, with a good, clear floor space between the two banks and a space at the back of each bank. In addition to the relative ease with which inspections, cleaning, and adjustments can be carried out by reason of this layout, each bank itself can be disconnected with reasonable facility and then lifted bodily out through the roof of the locomotive. The usual mechanical protective interlocking prevents access to the h.t. and resistance compartments unless the pantographs are locked down. Next in position to the h.t. compartment is a well-ventilated room containing the main cast iron and strip resistances.

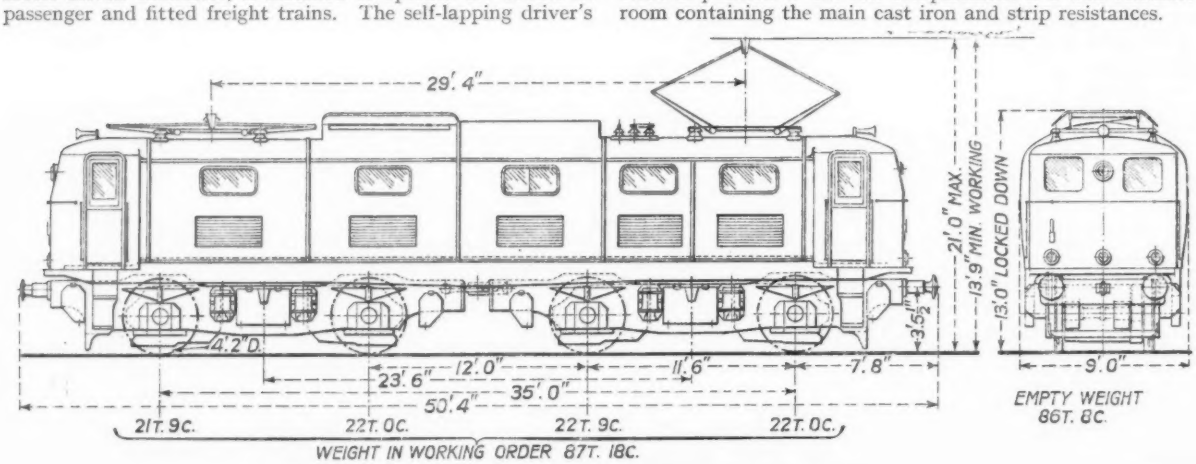


Diagram of the new L.N.E.R. mixed-traffic electric locomotive



The first 1,500-volt d.c. electric locomotive built by the L.N.E.R.

Four force-ventilated nose-suspended traction motors are installed, and although all of them are insulated for 1,500 volts the two on each bogie are connected permanently in series with 750 volts across the brushes. The motors can be operated in series and parallel combinations and four stages of field weakening are provided. A maximum one-hour rating of 467 h.p. per motor (1,868 h.p. per locomotive) is obtainable, but the normal one-hour value at full field is 435 h.p. per motor (1,740 h.p. aggregate) at 26 m.p.h. and with a tractive effort of 6,250 lb. per motor (25,000 lb. total). The maximum starting tractive effort is 45,000 lb., giving the ample adhesion factor of 4·36.

The ventilating air for the motors is furnished by the two 5-kW motor-generator-blower groups already mentioned; each group has a maximum capacity of 4,000 cu. ft. of air a minute, or 2,000 cu. ft. a minute to each motor supplied. To provide steady control over heavy trains descending in either direction from the summit of the line in Woodhead tunnel, regenerative braking is embodied, and for this purpose the traction motor fields are excited from the motor-generator portion of the second of the two 5-kW motor-generator-blower groups.

Adhesion Efficiency

If full adhesion efficiency is to be obtained from a double-bogie Bo+Bo locomotive with nose-suspended motors, the axle-load alteration caused by the motor torque reaction and the reaction to the drawbar pull must be counteracted. In the new L.N.E.R. locomotive this is done electrically by field weakening, and is only the second example of this method of counteraction which we can bring to mind. Control is effected by the driver closing a small low-tension switch mounted near the master controller, and which by remote control weakens the field of the leading motor, and so reduces its tractive effort. At the same time a red indicator lamp lights up to remind the driver to open the weight transference control switch and restore conditions to normal as soon as there is no longer any need for the highest starting effort. Incidentally, by reason of the large-diameter wheels the reaction from the drawbar pull itself should not be so great as in most high-power double-bogie locomotives, which have smaller wheels.

As passenger stock from all over the L.N.E.R. system is worked over the Manchester-Sheffield line, steam-heating equipment was essential, and has been provided in the form of a 300-kW automatically-controlled Bastian & Allen electrically-heated boiler containing chrome heating elements in tubes. It has a capacity of 750 lb. of steam an hour at a pressure of 65 lb. per sq. in., and is automatically shut down by the action of a Satchwell thermostat if the water level drops too low. Immediately below the boiler is a 200-gallon water tank.

REMOVING SLEET FROM OVERHEAD WIRES

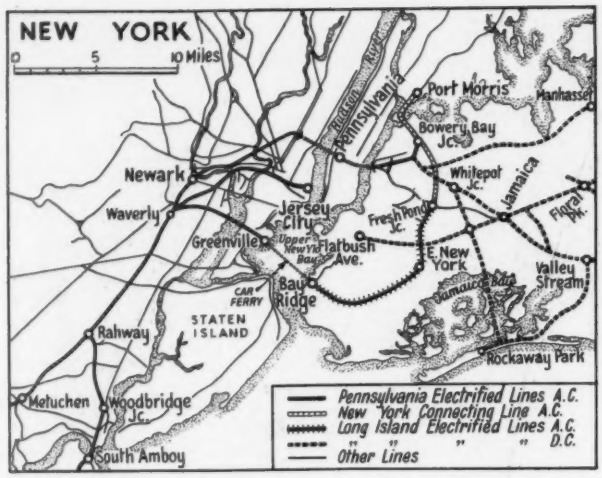
An account of the method used on a four-track line on the outskirts of New York

ON the main line between New York and New Haven the train service is frequent enough to dislodge any sleet formation before it becomes too thick to be troublesome. On the New York Connecting Railroad, which is the four-track link connecting the N.Y.N.H. system with the Long Island and Pennsylvania Railroads between Bronx and Long Island *via* Hell Gate bridge, the traffic is not always so frequent, and when sleet starts to form it has a chance to build up to a thickness which becomes more difficult to dislodge from a catenary contact system by the mere passage of the pantograph along the contact wire.

Difficulty has also been experienced by heavy sleet forming on the feeders, which have then been set into violent oscillation or dancing by the winds following the sleet storms; on several occasions these winds have caused the wires to be torn loose from their pin insulators, resulting in power interruptions and delays to service.

Sleet on feeders cannot be removed by mechanical means, as has been tried on catenary contact lines by running locomotives backwards and forwards during sleet storms

* Abstract of an article by H. F. Brown, Assistant Electrical Engineer, New York, New Haven & Hartford Railroad, published in the *Railway Electrical Engineer*.



Map showing New York Connecting Railroad in relation to other lines on Manhattan and Long Island

Extensive additional wind bracing has been applied to the catenary to prevent the high winds blowing the contact line so far out of alignment that the pantographs become de-wired, but this has not prevented excessive arcing between the pantographs and the contact wires, which, with heavy sleet formations, has at times been so severe as to cause flashovers to adjacent grounded structures or wires.

Power Exchange

Commercial power companies operating transmission lines have successfully melted sleet from their lines electrically by passing currents heavier than the normal over these circuits. Generally, this has been done by removing the lines from service and by circulating power at a voltage lower than normal, or by exchanging large blocks of power between two supply points or systems. Studies were made to see if such a method could be adopted to remove sleet from both the feeders and the contact lines of the N.Y. Connecting Railroad.

Calculations made for the Hell Gate line indicated that it would require between 600 and 700 amp. to raise the temperature of a 4/0 copper wire—the size of the feed and contact wires involved—by 10 to 15 deg. F., which was thought to be necessary to cause the sleet to melt. Sleet generally forms at a temperature slightly below freezing, and it is not unusual for the temperature to drop materially after the cessation of a storm. The motion of the air even at low speeds normally cools the wires and carries off any heat generated by the current, thus preventing any great rise. But ice is a good non-conductor of heat, and as long as the wire remains covered with ice the effect of the wind on the temperature seems to be negligible.

The problem was how to cause from 600 to 700 amp. to flow in the various wires involved, and still retain the wires in service for train operation. This current at the normal line voltage of 11,000 (single-phase) represents approximately 6,000 kW at 80 per cent. power factor. The system is a three-wire one, operating normally at 11,000 volts between the contact wire and rails, 11,000 volts between the feeders and the rails, and 22,000 volts between the contact wires and the feeders. There are four feeders to balance the four contact wires in the 22,000-volt circuit. Balancing auto-transformers are connected across the contact wire-feeder circuits, and are located at distances averaging four miles apart. The mid-points of these transformer windings are connected to the rails, the contact wire-rail current of the locomotives thus being returned to the 22,000-volt contact wire-feeder system through these transformers, the function of which is to reduce to a minimum the rail return currents.

Method Adopted

At East New York there is a 7,200 kVA motor-generator set installed in a Long Island Railroad substation to supply single-phase power to the Long Island's Bay Ridge electrified line, which is operated as part of the N.Y. Connecting and N.Y.N.H. electrified systems. This set takes power from the Consolidated Edison Company in connection with the operation of the East New York rotary converters supplying 600-volt d.c. to the Long Island multiple-unit trains; it is of the variable ratio type and can be operated to supply flat-top or suppressed peak loads up to the capacity of the set. It can be used either as a generator to supply single-phase power to the N.H. system from the Long Island Railroad supply or as a motor to take single-phase power from the N.H. system to supply the Long Island with three-phase power for its rotary converters. The set losses are approximately 15 per cent. operating in either capacity, and as the full-load armature current is 650 amp. at 11,000 volts, the set is just about the capacity required for sleet melting. Further, the location is very suitable for the exchange of power.

Ordinarily power is exchanged between the N.H. and L.I. Railroads on a 22,000-volt basis, that is, over the contact wire-feeder circuits; the balancing transformers act only to supply current at 11,000 volts to trains operating in that section over the contact wire-rail circuits. On a 22,000-volt basis the total exchange current, even when confined to a single feeder and contact wire circuit, is not greater than 350 amp. at the full capacity of the motor-generator set. Thus it was necessary to consider stepping-down the voltage at the balancing transformer stations, using these transformers as ordinary auto-transformers, by opening all the feeder circuits and using one contact wire-rail circuit for the power exchange, or, *vice versa*, by opening all the contact wire circuits and using one feeder-rail circuit for the tie.

Performance

A first endeavour was made during a sleet storm to use wattless current by operating the East New York set as a condenser, instead of actually exchanging power, but it was not successful, and the second try-out indicated that a definite switching schedule would have to be inaugurated. In the course of this second trial it was found that six to eight minutes were required in the sleet storm to warm up the 4/0 feeder to the point at which the ice coating would melt through and fall off by its own weight, but 12 to 15 minutes were necessary before the ice coating on the catenary system, with its greater cross section and thermal capacity, was loosened.

After this particular storm the switching schedule was developed, and involved the exchange of power between the N.H. and L.I. systems on an even clock-hour basis, first taking power for exactly half an hour, including the switching operation time, from one system, and then giving it back for the next equal period, thus avoiding any over-demands on either system on purchased power supply. In this manner the actual power used for sleet melting was confined to the losses inherent in the motor-generator set and the IR^2 losses in the contact wire-rail circuit or the feeder-rail circuit, as used, between Port Morris and Bowery Bay junction, which amounted to about 1,000 volts at 700 amp. During a succeeding severe sleet storm the heating process was kept on continuously for 36 hours, and although high wind caused some damage to the feeders after the ice had been removed, sleet was prevented from forming on the feeder and catenary circuits.

No extra equipment such as circuit breakers or transformers has been found necessary with this method, and during melting operations it is necessary only to issue "pantograph drop" orders to trains passing over the section breaks at Bowery Bay junction. This is to prevent any arcs which might be sustained by the voltage drop, about 1,000 volts, at these points, since all the circuits are kept alive and fed stub-end from the Port Morris end, with the exception of the one through circuit carrying the exchange current, this through circuit being applied to all contact wires and feeders in rotation.

SWISS LOCOMOTIVES.—A provisional order for two heavy or four light standard-gauge electric locomotives for the single-phase lines has been sanctioned by the management of the Swiss Federal Railways, but no details are forthcoming at the moment.

NEW AIR-CONDITIONED CORRIDOR COACH, B.B. & C.I.R.

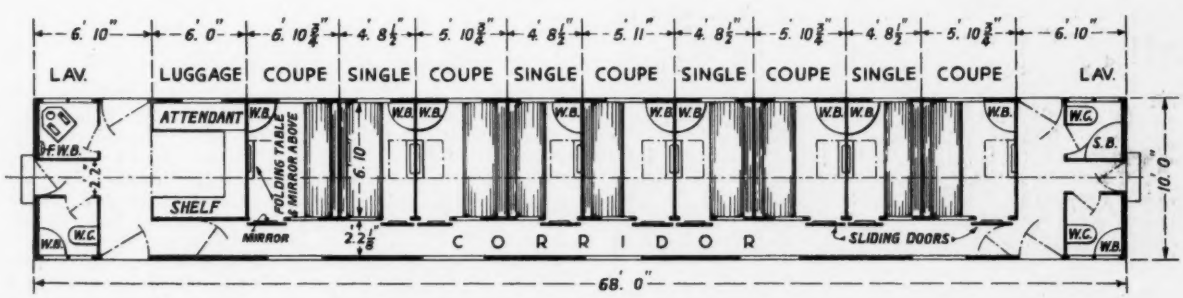
This new type of first class coach has five two-berth and four single-berth compartments each with wash basins, and four lavatories; it is air-conditioned on the ice-cum-Freon system



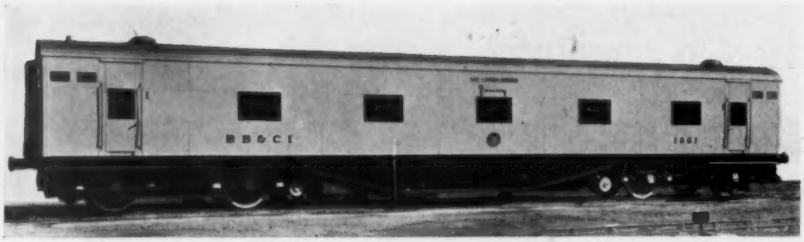
Single-berth coupé compartment arranged for day use. Note the anti-splash corner wash basin, shelves, and other convenient fittings

THE Bombay, Baroda & Central India Railway has recently constructed at its Lower Parel workshops (Bombay) to the design and under the supervision of Mr. T. Cooper, Locomotive & Carriage Superintendent, a new type of first class air-conditioned corridor coach. The body is divided into five two-berth and four single-berth compartments, and has an attendant's and luggage compartment at one end. There are four lavatories, one in each corner of the coach; one is equipped to suit the convenience of Indian passengers, and another is fitted with a shower-bath. There is a vestibule at each end of the coach, giving through connection when attached to any similarly fitted coach or dining car.

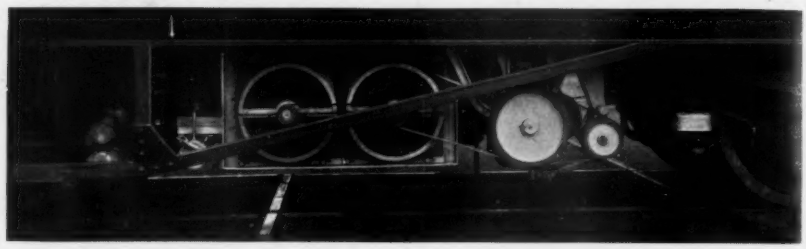
The compartment walls and ceilings are finished in a pastel



Floor and seating plan showing special lavatory for Indians in upper left-hand corner and shower bath in upper right-hand lavatory, also the luggage and attendant's compartment and mirrors on the sliding doors



Left: General view of corridor side of the new coach



Right: Air-conditioning compressor plant housed beneath the high-tensile steel underframe

shade of green Rexine, which, though brightening the interior, has a soothing effect on the eye. The corridor is finished in the same colour as the compartments, and the floor is laid with Goodyear rubber flooring of a light brown pattern. The berths are upholstered in wool moquette with velvet finish, and the use of Hairlock cushions, together with well-designed backs and arm rests, make the seats and berths very comfortable. In each compartment, there is an anti-splash type corner wash basin mounted in an attractive cabinet. Other features include an assortment of fittings such as coat-hangers, full-length mirror on the sliding door, and carpet on the rubber flooring. A useful innovation is the introduction of a telephone in each compartment, enabling passengers to call for their early morning tea, shaving water, or drinks, from the dining car.

On the compartment side, there is a sealed window for each compartment, and on the corridor side there are five sealed windows each 3 ft. 6 in. wide and the main doors are also fitted with window lights. Each window light consists of an outer pane of Calorex glass and an inner pane of ordinary glass. The inner frames of the corridor windows are fitted with a smoke-tinted glass to reduce interior glare. Blinds are provided for all windows.



Two-berth coupé compartment as arranged for early morning or afternoon tea or other refreshments with flap table let down between corner seats. The upper berth is available for night travel

Air-conditioning

The whole coach is air-conditioned on the unit principle. That is, the degree of cooling in any compartment is left to the passengers' own choice, a system adopted in all the B.B. & C.I.R. air-conditioned coaches, which has proved very satisfactory. No heating arrangements have been provided, as the trials on the North Western Railway with a B.B. & C.I.R. coach fitted with the same type of cooling plant—as recorded in our issue of August 9 last—proved that heating was not necessary.

There is a constant input of fresh air which is primarily filtered through viscous filters, and deodorisation is effected by the generation of ozonised air by an Ozonair apparatus fitted in the fresh-air duct. Air-conditioning is by the ice-cum-Freon system, in which the ice is used only while the coach is stationary, or when running at low speeds. At high speeds, the Freon system will meet practically all demands, and a recent trial run has shown that a reduction in temperature of 30° F. is possible with the temperature outside at 96° F. The Freon system has been supplied by J. Stone & Co. Ltd. of Deptford, England.

Insulation and Reduction of Weight

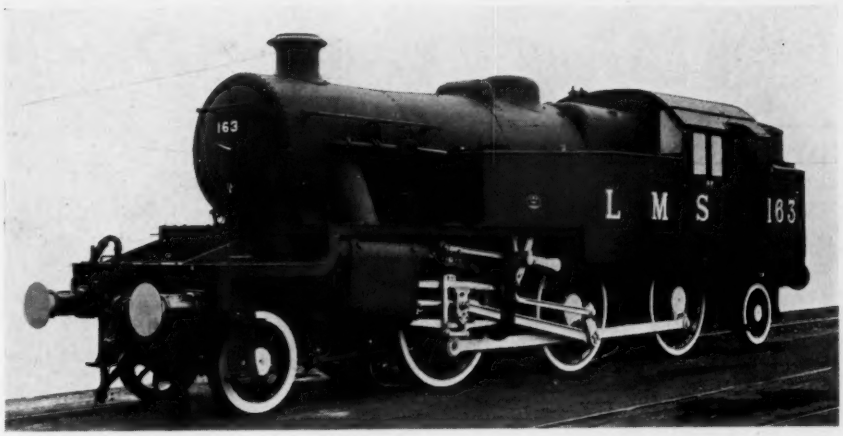
To minimise weight, the underframe is made of high-tensile steel with a resultant reduction in weight of 2½ tons, as compared with the normal steel underframe. The body is of wood construction, and is insulated from the underframe by Spencer Moulton india rubber packings. The use of rubber for packing and inside flooring, together with cork insulation in the floor, reduces noise to a minimum. The sides are insulated with Kapok mattresses and Celotex.

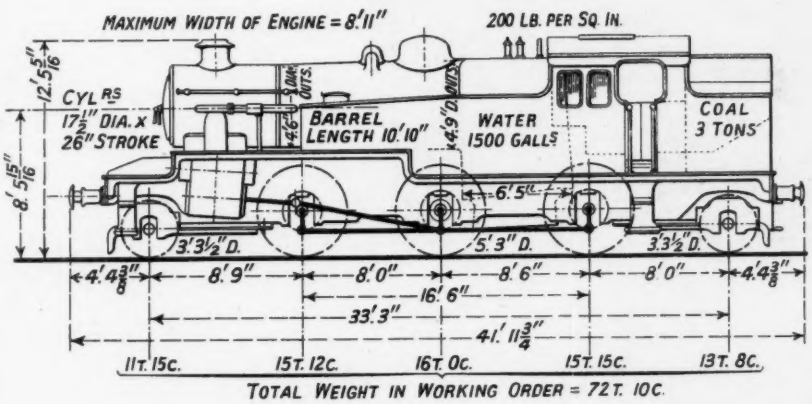
The exterior of the coach is painted pearline white, although it was the original intention to fit Monel metal panel plates, but due to the present situation these did not arrive in time. The lettering and railway crest are chromium plated. For the convenience of passengers, an attendant will always travel in the coach.

RE-BOILERED TANK ENGINES, L.M.S.R.

Standard taper-boiler 2-6-2 tank locomotive provided with larger boiler giving increased superheating surface

BY Mr. W. A. Stainer's courtesy, we are able to reproduce a photograph of the L.M.S.R. 2-6-2 type tank engine No. 163 which has recently been fitted with a larger boiler than that originally used for the "3P" class locomotives of the same general design. As the dimensioned drawings show, the new boiler is of increased diameter at the front end, its centre from rail is raised and there is an advance in the heating surfaces, which are respectively: large and small tubes 939·0 and 996·4 sq. ft.; firebox 106·9 and 111·2 sq. ft.; superheater 80·0 and 145 sq. ft. The grate area is unaltered at 19·2 sq. ft. The use of the larger





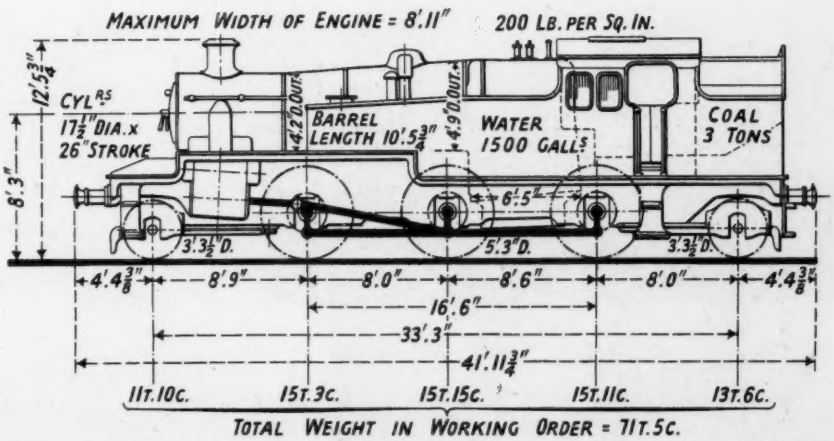
Above: L.M.S.R. "3P" class tank engine with larger boiler

Left: Overall dimensions and weight distribution of same class of engine, as re-boilered

Below: Overall dimensions and weight distribution of original "3P" class tank engine with taper boiler

boiler has naturally had some effect on the weight of the engine, but the addition is only the slight one of 25 cwt. The boiler pressure remains as before. As and when it becomes necessary to fit new boilers to other locomotives of the same class, the larger size as now applied to engine No. 163 will take the place of the original and smaller one, the two sizes being interchangeable without alteration to the frames.

This class of engine has proved very useful for working passenger trains of a stopping character of moderate loading, and also provides a handy type for other services within the range of its capacity.



British Railways and the War—60



Above : Mr. Winant, the new U.S.A. Ambassador, leaving G.W.R. special saloon at an intermediate station en route from Bristol to London, and being greeted by H.M. The King. The Duke of Kent is at the entrance to the saloon



Left : Southern Railway unit of the Home Guard changing over guard at a headquarters established in a camping coach





Southern Railway Emergency Repair Practice. Above : A repair party setting out for the scene of a reported incident. Left : Foreman giving instructions to repair party outside a control centre ; the latter is located in a dugout and is guarded by the Southern Railway unit of the Home Guard

RAILWAY NEWS SECTION

PERSONAL

RAILWAY EXECUTIVE COMMITTEE

The Minister of Transport has appointed Mr. Gilbert S. Szlumper, C.B.E., Railway Control Officer in the Ministry, to be a Member of the R.E.C.

The Earl of Rosebery, D.S.O., M.C., Deputy Regional Commissioner, has been appointed Regional Commissioner for Civil Defence in Scotland in succession to the Rt. Hon. T. Johnston, M.P.; and Mr. William Quin, J.P., Deputy District Commissioner at Glasgow, has been appointed Deputy Regional Commissioner.

BOARD OF TRADE APPOINTMENTS

The following Board of Trade appointments are announced :—

Sir Arnold E. Overton, K.C.M.G., M.C., to be Permanent Secretary.

Mr. E. H. Hodgson, C.B., O.B.E., to be Second Secretary.

Mr. R. C. G. Somervell to be Under Secretary.

SOUTHERN RAILWAY APPOINTMENTS

The following appointments have been announced :—

Mr. C. F. de Pury, Western Divisional Superintendent, Exeter Central, to be Southern Divisional Superintendent, Southampton.

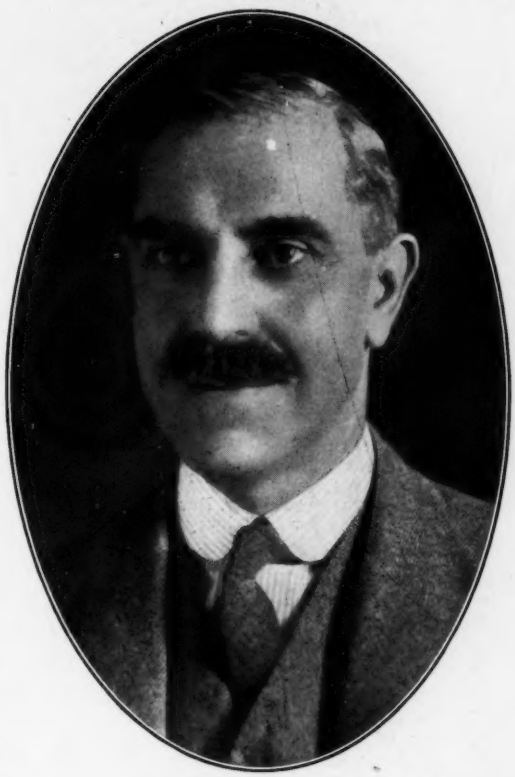
Mr. G. Bishop, Assistant Divisional Superintendent, Southern Division, to be Western Divisional Superintendent, Exeter Central. Mr. Bishop has been acting as Liaison Officer between the Southern Railway and the Southern Command.

Mr. Charles H. Luke, F.R.S.A., has been elected a Director of the Superheater Co. Ltd.

We regret to record the death of Mr. Charles John Walsh, Managing Director of the United Steel Companies Limited and of a subsidiary, the Appleby-Frodingham Steel Co. Ltd., Scunthorpe, Lincs. Mr. Walsh was a past Master Cutler of Sheffield, and before joining the United Steel Companies was Managing Director of Ibbotson Bros. & Co. Ltd., Globe Steelworks, Sheffield.

Mr. R. T. Garrett was appointed Chairman of the National Joint Council of Port Labour Employers on March 3. Mr. Garrett is a London Director of the Mount Lyell Mining & Railway Company and a Member of the Port of London Authority.

Mr. W. A. Stanier, M.I.Mech.E., M.I.Loco.E., who, as announced in an editorial note on page 237, has been elected President of the Institution of Mechanical Engineers, is the son of the late Mr. W. H. Stanier, Chief Stores Superintendent, G.W.R., and was born in 1876. He was educated at Wycliffe College, Stonehouse, and entered the Swindon works of the G.W.R. as an apprentice in 1892. After serving his apprenticeship he became a draughtsman, and in 1900 was appointed Inspector of Materials; the next year he was transferred to the Running Department as Technical Inspector at Swindon running shed. Early in 1903 Mr. Stanier was promoted to be Assistant Divisional Superintendent, Swindon, and a year later was transferred to Paddington in a similar capacity. In 1906 he returned to Swindon as Divisional Locomotive Superintendent, a position he held for six years. At the beginning of 1913 he was appointed Assistant Locomotive Works Manager at Swindon, and was promoted to be Works Manager in 1920. Two years later he was appointed Works Assistant to the Chief Mechanical Engineer, and in 1923 became Principal Assistant to the C.M.E. It was in 1931 that Mr. Stanier was offered and accepted the appointment—as from January 1, 1932—of Chief Mechanical Engineer of the L.M.S.R. at Euston. In the autumn of 1936 he was appointed by the Government of India as a member of the (Wedgwood) committee of inquiry into the position of the Government-owned railways in that country; he returned from India in the spring of 1937. Mr. Stanier was appointed a Member of the Government of India committee of inquiry into the design and purchase of Pacific locomotives in July, 1938. He is a Member of Council and has been a Vice-President of the Institution of Mechanical Engineers; he was President of the Institution of Locomotive Engineers for the 1938-9 session. In July, 1939, he was elected a Member of the Permanent Commission of the International Railway Congress Association.



Mr. W. A. Stanier

Chief Mechanical Engineer, L.M.S.R., who has been elected President of the Institution of Mechanical Engineers, 1941–1942

Lord Wakefield of Hythe has left estate valued at £561,220. A portrait and biographical notice of Lord Wakefield was published in our January 24 issue.

Mr. J. Dudley Stuart has retired from the position of Traffic Manager of the Dublin United Tramways Co. (1896) Ltd. after 45 years of service with the company. He was the recipient recently of a presentation from his colleagues and staff at the company's head office in Dublin.

Mr. W. J. Harper, who has been re-elected President of the Liverpool Cart & Motor Owners' Association for the fourth successive year, is the third member of his family to occupy that position. His father was President when the association was incorporated in 1891, and his uncle was President from 1907-13. The Liverpool Cart & Motor Owners' Association is the senior transport organisation of Merseyside, and, according to the *Liverpool Daily Post*, is in direct line of descent from a company of cart owners which operated in the port as far back as 1750.

Mr. F. G. Hoskins, General Superintendent, Baltimore, Baltimore & Ohio Railroad, has been appointed General Manager, Eastern Lines, as from January 1.

Mr. C. M. Shriver, Superintendent, Cumberland Division, Baltimore & Ohio

Railroad, has been appointed General Superintendent, Baltimore.

Mr. John P. Kiley, Special Representative of the Chief Operating Officer Chicago, Milwaukee, St. Paul & Pacific Railroad, has been appointed Auditor of Investment & Joint Facility Accounts, in place of Mr. A. E. Lodge who died on January 12.

Mr. F. E. Lewis, General Manager Chicago, Indianapolis & Louisville Railway, retired in January.

Mr. Harry L. Lauby, Traffic Manager, Salt Lake City, Union Pacific Railroad, has been appointed Eastern Traffic Manager, with headquarters at New York.

The death at Toronto on February 28 is announced of Major General Alexander McDougall, C.B. General McDougall, who was born in 1878, was educated at Toronto and Cornell Universities, and in 1902 was appointed an assistant in the Astronomical Office. Later in the same year he became Assistant Engineer on the Quebec bridge. He served for a year as engineer to the Mexican Light & Power Company in Mexico; for three years was in practice as a consulting engineer; and was also employed in the Mexican Public Works Department. After 1906 he gave his attention to his contracting business, and, with his partner, constructed 30 per cent. of the National Transcontinental Railway. He was Hydraulic Engineer to the Georgina Bay Canal Survey in 1914. General McDougall became an Engineer Officer at the beginning of the last war, and served as an Infantry Officer in 1915. During the next year he was given command of the 1st Canadian Forestry Battalion and promoted Lieutenant-Colonel. He served as Director-General of Timber Operations in Great Britain and France, and in 1918 was given command of the Canadian Forestry Corps with the rank of Major General.



Mr. J. E. M. Rowland

Chief Railway Commissioner, Burma Railways and President of the Burma Railway Board, 1937–1941

Mr. J. E. M. Rowland, Chief Railway Commissioner in Burma, has been granted two years' leave preparatory to retirement as from February 28.

Mr. E. A. Sims, Traffic Manager, Burma Railways, succeeds Mr. Rowland as Chief Railway Commissioner, but Mr. W. H. Chance, V.D., Controller of Railway Accounts, has been appointed to officiate as Chief Railway Commissioner, pending the return of Mr. Sims from leave.

Mr. John Edward Maurice Rowland was educated at Dulwich College and gained his early engineering experience at workshops in Liverpool. In May, 1904, he was appointed an Assistant Engineer on the Burma Railways and, on arrival in Burma, was placed on new construction work. After varied construction and open-line experience he was promoted to the rank of District Engineer in 1919, and ten years later became Deputy Chief Engineer. Mr. Rowland officiated as Chief Engineer in 1933 and 1934, and was confirmed in the appointment of Chief Engineer in March, 1935. In February, 1935, Mr. Rowland also officiated as Agent. This appointment was confirmed in the following October. When the separation of Burma from India took effect on April 1, 1937, autonomy was bestowed on the Burma Railways, and the Burma Railway Board was set up. The President of the board was officially termed the Chief Railway Commissioner, and the title of Agent was dropped.

Indian Railway Staff Changes

Mr. A. Cornish, Superintendent, Mechanical Workshops, N.W.R., has been permitted to retire from Government service from November 1 last.

Lieut.-Colonel H. H. E. Gossett, R.E., has been appointed to officiate as Deputy General Manager, Works & Secretary, E.B.R., from September 2 last.

Mr. H. M. R. Morse has been appointed to officiate as Deputy Chief Mechanical Engineer, N.W.R. from November 12 last.

Mr. E. Ingoldby has been promoted permanently as Chief Mechanical Engineer, G.I.P.R.

Mr. R. C. Case has been promoted as Chief Mechanical Engineer, G.I.P.R., in a provisionally permanent capacity.

Mr. H. P. Renwick has been confirmed as Deputy Transportation Superintendent (Power), G.I.P.R.

Mr. D. H. Hewitt has been promoted as Deputy Chief Mechanical Engineer (C. & W.), G.I.P.R. in a provisionally permanent capacity. These four appointments date from August 16 last.

Messrs. W. T. Biscoe, V.D., A. A. Phillipps, V.D., and J. W. Ogle have been promoted as Deputy Chief Commercial Managers, N.W.R., in a provisionally permanent capacity.

THE RAILWAYS OF CHILE (*Concluded from page* 246)

recent years, to attract tourist and other traffic, has resulted in considerable improvement in the services, and the large steel carriages and Pullman sleeping and restaurant cars now compare well with those of American and European railways. Working expenses, without other charges, were actually 275,966,195 pesos, making the ratio of working 53·94 per cent. Appropriations from net earnings were: depreciation, 54,771,553 pesos; interest charges and taxes, 32,881,542 pesos; pensions, 33,286,172 pesos; gratuities to staff, 21,432,451 pesos; *Proteccion Social*, 40,587,324; Government's statutory proportion of earnings, 35,779,790 pesos; and a special allocation for repairs of earthquake damage, 15,398,492 pesos. The Government had acceded to the petitions of the employees for a gratuity, and they had been granted the equivalent of a month and a half's pay; this was met out of net earnings although it had been understood that it was to be paid by the National Treasury. The result of this and other unforeseen payments is a deficit of over 4,000,000 pesos, compared with the surplus of 11½ millions in 1938.

The State Railways are suffering from unrestricted road competition which is aided by construction of many new highways parallel to the railways. All the Chilian railways are now feeling the effect of the war. Shipping is limited, while on the other hand essential equipment and materials are almost unobtainable, or involve heavy increases in costs. At the same time social legislation is placing on the working expenses a burden which cannot be passed on to the public in the shape of increased charges. The outlook is not encouraging.

TRANSPORT SERVICES AND THE WAR—80

Arrival of the new U.S.A. Ambassador to Great Britain—Extension of summer time—L.N.E.R. medal for bravery—Accounts and statistics provisions relaxed—Air lines

Mr. John Gilbert Winant, the newly-appointed American Ambassador to Great Britain, arrived in England by air from Lisbon on Saturday last, March 1. He landed at Bristol airport where he was greeted by the Duke of Kent. After inspecting a Military Guard which lined the runway, Mr. Winant and the Duke of Kent drove to Temple Meads station, Bristol, to join their special train. This was composed of the following G.W.R. stock: one brake compo, one first class, two special saloons (respectively the *Princess Royal* and the *Queen Mary*), one first class, and one brake compo. The King created a precedent by personally greeting Mr. Winant at an intermediate station. It is the first time that a British Monarch has accorded such a welcome to a new Ambassador, and the photograph which we reproduce at page 254 shows His Majesty shaking hands with Mr. Winant as he stepped from the train. The King then led Mr. Winant to his waiting car and later he performed his first official act in this country when he formally handed to the King his letters of credence. He then took tea with the King and Queen and afterwards completed his journey by special train to Paddington.

Duties of the Regional Commissioner in Scotland

In connection with the appointments of the Earl of Rosebery, D.S.O., M.C., as Regional Commissioner for Civil Defence in Scotland (in succession to the Rt. Hon. T. Johnston, M.P.), and of Mr. William Quin, J.P., now Deputy District Commissioner at Glasgow, as Deputy Regional Commissioner in place of the Earl of Rosebery, the Ministry of Home Security has stated officially that the duties of the Regional Commissioner and the Deputy Regional Commissioner and their responsibilities to the Minister of Home Security remain as before. In case of sudden emergency involving a complete or partial breakdown of communications, the Regional Commissioner, in the absence of the Secretary of State for Scotland, will have full authority to give urgent decisions in the name of the Government. It has always been contemplated, however, that in any such an event the Secretary of State (if not already in Scotland) will proceed to his headquarters in Edinburgh without avoidable delay and there assume general direction of affairs and give urgent decisions on behalf of the Government.

Alterations in Civil Defence Regional Boundaries

As a result of 18 months of experience of the working of the Civil Defence regional organisation in war conditions, it has been decided to make a few alterations in the boundaries of some of the Civil Defence Regions. On Monday next, March 10, the following boundaries will come into force :—

The South Eastern Region, with headquarters at Tunbridge Wells, will be extended to include that part of the County of Surrey which is outside the London Civil Defence Region.

The Southern Region, with the headquarters at Reading, will be extended in the south-west to include the whole of Dorset. The boundary on the east side will be the Hampshire and Berkshire borders. Under present arrangements, the County of Dorset is divided between two Civil Defence Regions, and for administrative convenience it is deemed advisable to have the whole county in one region.

Summer Time

An extension of summer time in Great Britain by one hour from the night of Saturday, May 3, to the night of Saturday, August 9, was announced in the House of Commons by Mr. Herbert Morrison on Tuesday last. During this period of 14 weeks B.S.T. will therefore be two hours ahead of G.M.T. The following will be the new summer time hours of sunrise and sunset in London on the opening and closing days of the period and on the longest day :—

	Sunrise	Sunset
May 3	6.30	9.27
June 21	5.42	10.21
August 9	6.35	9.35

Blackout at present begins half an hour after sunset and ends half an hour before sunrise.

It has been announced in Vichy that summer time will be introduced in France on May 15.

L.N.E.R. Medal for Courage and Resource

In the annual report of the directors of the London & North Eastern Railway Company is recorded the board's appreciation of the efficient manner in which the staff of the company has carried out its duties under difficult conditions arising from the war. Many members of the staff have performed conspicuous acts of bravery or have shown exceptional initiative in dealing with dangerous situations arising from enemy action. To mark such cases of meritorious service the directors have decided to institute a silver medal which will be known as the London & North Eastern Railway Medal. The medal has been designed by Mr. Gilbert Bayes, P.R.B.S., H.R.I.; it bears the L.N.E.R. crest on one side and on the other the words " For Courage & Resource."

Railway Fire Fighters

During a severe air raid at a West of England town, a railway goods checker who saw incendiary bombs dropped at once opened up the railway fire station and, with a shunter who is a trained fireman, started to deal with the fires. A mobile trailer pump was put into action by these two railwaymen, who next tackled further incendiary bombs which had fallen on top of petrol storage tanks and had been thrown down from the top of a tank by a fire spotter. They were joined by a young lad and extinguished a trail of incendiary bombs fallen among wagons and also in a bomb crater. They were thrown to the ground by blast, but immediately set about putting out electric lights on all floors of a warehouse, which had been switched on by the bomb explosion. A large timber-laden lorry with its petrol tank on fire was tackled; they removed the timber from the lorry and placed sheets of corrugated iron over and around it to prevent the fire spreading



The seventh and latest of the "Billy Brown" series of London Transport newspaper advertisements depicting the ideal London blackout traveller. The first four were reproduced at page 50 of our January 10 issue and two more at page 126 of our January 31 issue. We understand that this excellent series will be concluded with one more advertisement as David Langdon, the artist, has joined H.M. Forces. The accompanying verses are by Richard Usborne. Four of the "Billy Brown" series have now been produced in poster form, two of double royal size, and two broadside double crown

to other timber in the vicinity. Again the trio flung themselves to the ground as five high explosive bombs dropped on surrounding buildings. A further fire was seen and the motor trailer pump was got into action after it had been hauled some distance by hand and finally with the help of an army lorry. When further bombs were dropped the railwaymen assisted in dealing with injured men from a gas works. Shortly before midnight an hotel which had previously been bombed caught fire in the basement, and, as there were no firemen dealing with this fire, the railway checker gave instructions for hose to be connected so that the fire was brought under control. Eventually this courageous railwayman, who returned to his depot to find that water had become frozen and his men were exhausted, went to the police station and telephoned to the railway control office for relief men to be sent, but he then returned to continue to fight fires until 6 a.m., almost twelve hours from the time his activities began.

Railway Tunnel Shelter in Edinburgh

At the end of a tour of the air raid shelters in Edinburgh on February 18, Miss Ellen Wilkinson, Parliamentary Secretary to the Ministry of Home Security, inspected the disused Scotland Street railway tunnel in the heart of the city. "It may be very good for growing mushrooms just now," she said, "but I am not quite sure if it would be good for human beings. Of course, the City Engineer is quite alive to the position. The Ministry of Home Security has accepted the tunnel in principle, but there will have to be discussions as to how the damp problem can be met."

London Tube Railway Services

The Waterloo & City tube line of the Southern Railway introduced the following service on Monday last, March 3, during peak hours only: from 7 a.m. to 10.15 a.m., and from 4 p.m. to 6.30 p.m. On Saturdays the service will be maintained continuously from 7 a.m. to 2 p.m.

London Suburban Train Alterations

Monday last, March 3, the first day on which the blackout period shrunk to less than 12 hr. nightly, was marked by an extension of office hours by many London firms, and, owing to the diminished need for mid-afternoon transport from London terminals to the suburban and outer suburban areas, the main-line railways introduced modifications of their services on the same day.

L.N.E.R. (G.N.) Steam Services

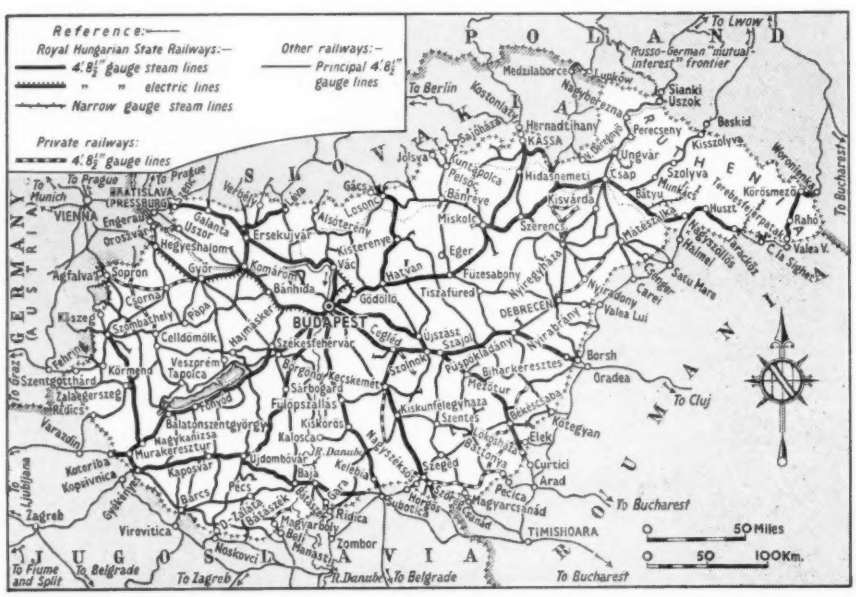
An inner suburban alteration of note on the Great Northern section, which came into force on Monday last, March 3, is the withdrawal of steam service between Highgate and East Finchley, consequent on the opening of the new Highgate tube station; amplification has taken place of the steam service to and from Alexandra Palace, and passengers from the King's Cross and Finsbury Park direction to the High Barnet branch, and *vice versa*, change at Highgate instead of East Finchley. There is a temporary suspension of the L.M.S.R. steam service between Broad Street and L.N.E.R. suburban stations.

Government's Dock Labour Scheme

On February 27 it was announced that in order to secure a quicker turn-round of ships in port the Government proposed to put into operation at the beginning of the pay week commencing after March 10 a scheme whereby the Minister of Transport would employ all dock workers registered at Liverpool (including Birkenhead), Manchester, Preston, Garston, Bromborough, Ellesmere Port, Partington, Widnes, Runcorn, and Weston Point on a guaranteed (weekly) basis, combined when possible with payment by results. The Minister of Transport is to operate the scheme through the Regional Port Director and any man accepting employment will be required to present himself for any work at any of the ports for a minimum of eleven turns a week. From the labour force so made available the Labour Superintendent on behalf of the Regional Port Director will allocate to "approved employers" (that is master stevedores, master porters, and so forth) numbers and types of men to meet their requirements. The Chief Traffic Manager at each port is to be responsible to the Regional Port Director for supervising the operations of the employer. The Minister of Transport hopes to secure a 40 per cent. increase in the turn-round of ships in ports in the area affected by the scheme, and the plan just announced is designed to assist the attainment of this end. Conditions of service are being circulated to the men with their pay in respect of the week ended March 7 and will be assumed accepted unless notification to the contrary is received within four days. Among the conditions under which the scheme is being operated is one to the effect that no labour other than that provided through the plan is to be employed.

Accounts and Statistics Provisions Relaxed

The Minister of Transport has made three Orders under the Emergency Powers (Defence) Act relating to the accounts and returns of railway and similar companies. The first of these (dated January 22, 1941) applies to all railway companies other than those which passed under the control of the Minister just before the outbreak of war, and the Manchester Ship Canal. It relaxes the obligation imposed on railway companies by Section I of the Railway Companies (Accounts & Returns) Act, 1911, to prepare and forward accounts and returns in accordance with the form set out in the first schedule to that Act. The Order provides that in respect of the year 1940 there shall be no obligation on the companies to prepare and forward a number of accounts and returns which are specified in a schedule to the Order and an index or a map. The second Order issued by the Minister of Transport makes similar provision for the Manchester Ship Canal Company. The third (dated February 12, 1941) relates specifically to the controlled railway companies. This last, in addition to listing the annual returns which may be omitted, specifies the form



The railways of Hungary as enlarged by territorial acquisitions during 1938-39; subsequently Hungary took over from Roumania a portion of Transylvania

in which the revenue receipts and expenditure of a railway company shall be shown for the past year. It is in accordance with this Order that the railway companies prepared their recently-issued annual reports for 1940.

Hungarian Railway Link with Russia

Direct railway and postal traffic between Hungary and Russia is expected to begin on March 15, in accordance with an agreement signed on March 1. This, it is claimed, will give Hungary many commercial advantages, as the route will be an outlet for Balkan traffic, and, apart from affording a direct trade route to Russia, it will also serve as a route to America and other markets. So far only one line is involved —that from Munkacs to Lawoczne—but it is claimed that this should also reduce to some extent the strain on German railways for Russian exports to Germany.

Hungarian Transport and Territorial Acquisitions

The area of Hungary, as established by the Treaty of Trianon after the war of 1914-19, was 35,935 square miles, and the population (according to the official 1937 estimate) was 8,688,319. The decisions of the Vienna Conference in November, 1938, added about 4,258 square miles of territory that had been part of Czechoslovakia, and raised the population to 10,119,588. In March, 1939, Hungary absorbed the Czechoslovak province of Ruthenia (or Carpatho-Ukraine), with an area of about 4,250 square miles and a population of 552,000. Then, on August 30, 1940, the Vienna Conference consisting of representatives from Germany, Italy, Hungary, and Roumania, awarded Hungary the northern portion of Transylvania. Pending precise delimitation of the new frontiers by the mixed Roumanian-Hungarian commission, the portion ceded is estimated at approximately 21,875 square miles, with a population of 2,609,000. Geographically Transylvania is more closely linked with Hungary than with Roumania, and until 1919 Transylvania was a principality of Hungary occupying the extreme eastern portion of the kingdom; under Roumanian rule it was renamed Ardial, and towns and villages were also given new names. After the last war more than 50 per cent. of the population of Transylvania was Roumanian, but the professional, business, and industrial activities of the province were largely in the hands of Hungarians and Germans, who were most numerous in the principal towns. The Roumanian population consisted principally of peasants and industrial labourers. Transport between Transylvania and Hungary is easier and more natural than between Transylvania and Roumania. The railways in Northern Transylvania have increased the Hungarian network by some 1,460 miles making the total for all Hungary approximately 7,255 miles, exclusive of minor lines. The new boundary lines, however, cut the main railway connections with the Szekler country—at the furthermost tip of Northern Transylvania—as rail transport between that area and the rest of Hungary is under Roumanian control. The Szeklers, though largely Magyar in race and occupying part of the territory regained by Hungary, have direct rail communication only with Roumania, except for a narrow-gauge line which involves transhipment of goods and makes this route of doubtful commercial value. In the absence of further boundary revisions or the construction of a new standard-gauge railway (which would be difficult and costly), communications with this area will continue to be unsatisfactory.

The Paris Metro

Some 157 km. (about 98 miles) of the Paris Metro are now in service, according to a German announcement made in Paris on February 22. It was added that 36 stations are still closed, however. The Paris Metro system comprises 178 km. (111 miles), including the Sceaux line.

Italian Somaliland

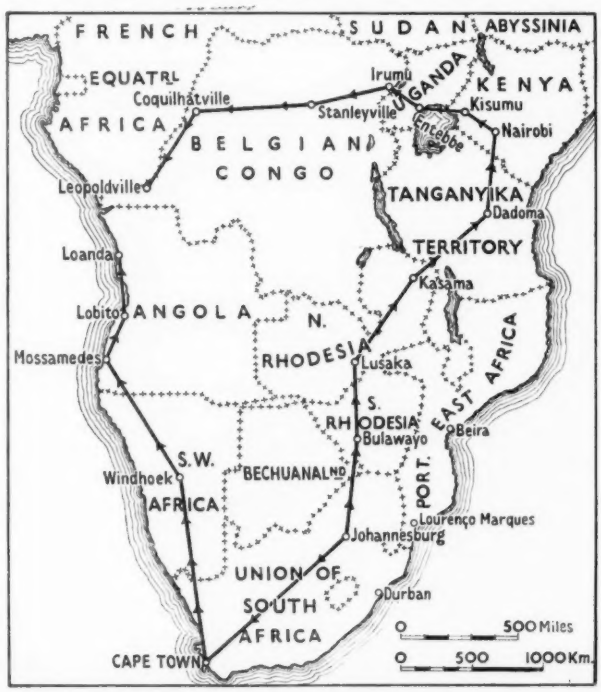
The rapid advance of the Imperial Forces operating from Kenya have resulted in the occupation of a large part of Italian Somaliland, the capture on February 25 of the capital, Mogadiscio, and the transfer to British control of the only railway system in the Colony. This is a narrow-gauge railway which runs from Mogadiscio *via* Afgoi on the Webi Shebeli (20 miles), and at one time terminated at Bivio Adalei (40 miles). More recently the railway has been extended to Villagio Duca degli Abruzzi (80 miles), a town of some 9,000 inhabitants and the centre of the principal agricultural colonisation experiment in the Colony, that of the Societa Africada Italo-Somalia; this town was occupied by British troops on March 2. Mogadiscio itself is a harbour town with a population of some 50,000, of whom 20,000 are Italians. It was taken by Italy in 1892 and proclaimed the capital of Italian Somaliland in 1905.

Italian Air Line to Buenos Aires

The Argentine Government has issued a decree authorising the Italian Trans-Continental Airlines Company to establish a commercial air service between Rome and Buenos Aires *via* the African coast, Brazil, and Uruguay. The service must start within six months from February, and may be extended to Santiago de Chile. Of the staff employed in Argentine territory 80 per cent. must be of Argentine nationality, and the air crews must be either Argentine or Italian civilians. At present the Italian air service from Europe extends only to Brazil, where it connects with the German Condor Company serving Argentina and Chile. Previous reference to this air link between Italy and South America was made at page 128 of our January 31 issue.

Further Extension of South African Airways

The South African Airways service, which at present terminates at Entebbe in Uganda, will shortly be extended to the Belgian Congo. From Entebbe the Lockheed Lodestar planes used in this pan-African service will fly to Irumu in the Congo and then to Stanleyville, Coquilhatville, and Leopoldville, which will be the new terminus. Like the present one, the new service will be weekly in each direction. South African Airways will thus make a wide and almost complete circuit—there is a short gap only between Leopoldville in the Congo and Luanda in Angola—round Southern and Central Africa covering nine territories and more than 6,000 miles. Every country from Uganda, north of the equator, to the Cape will be in communication by air with the Union. They are the two Rhodesias, Tanganyika, Kenya, Uganda, the Congo, South West Africa, and Angola. There are already link services from Portuguese East Africa and Nyasaland and there are feeder services in the Congo and elsewhere which connect with the main route.



Sketch map of the South African Airways

GREAT NORTHERN RAILWAY COMPANY (IRELAND)

Depreciation funds not liquid—Dividend policy—Increased receipts—Advances in expenditure—Bank loan reduced—Use of peat for fuel—Need for recognition of proprietors' sacrifices

The annual general meeting of the Great Northern Railway Company (Ireland) was held at the Gresham Hotel, Upper O'Connell Street, Dublin, on February 25, the Rt. Hon. Lord Glenavy, Chairman of the company, presiding.

The Chairman said: Ladies and Gentlemen: On the railway proper gross receipts increased by £186,148 and at £1,407,524 were greater than in any year since 1930. But expenditure also increased by £180,205 and at £1,297,145 was greater than in any year since 1928. By reason of the increase in expenditure the improvement in railway net receipts was only £5,943. Taking into account receipts from the other parts of the undertaking, profits on the realisation of investments, and reductions in fixed charges, the total net receipts improved by £8,813. With a saving of £2,373 in the provision for deficiency of income tax, and savings amounting in all to £43,027 due to appreciation in the value of investments, the improvement in the net earnings of the undertaking as a whole amounts to £54,213.

In total the net earnings reached £155,461. Deducting the sum required for the payment of debenture interest there is a surplus for the year of £61,788. Of that amount £26,694 is required to extinguish the deficit brought forward from last year, leaving a balance available for dividends of £35,094. Out of that sum the directors propose that one year's dividend be declared on the guaranteed stock, leaving a credit balance of £323 to be carried forward. These results represent a substantial improvement in the company's position, but not yet a recovery to the degree of financial strength imperative for an undertaking with such vital duties to perform. The improvement is, indeed, largely fortuitous in character, being due mainly to the appreciation in investments and to a departure from established practice in respect of the provision for deficiency in income tax arising out of the transfers to depreciation funds.

Depreciation Fund Allocations

It is important that proprietors should clearly understand the manner in which the latter of these items has been dealt with in the year's accounts. Over a period beginning so far back as 1913 the company has transferred annually to depreciation funds sums calculated on the life of its various wasting assets. But for that prudent course the undertaking would scarcely have survived the critical years which culminated in the company having to carry forward in 1938, for the first time, a debit balance. The depreciation funds stand in the accounts at a total of £1,410,888 and some proprietors, not familiar with the accounts, seem to have derived wholly mistaken impressions from that figure, for nothing like the amount mentioned is at the disposal of the company. Part of it is locked up in stocks of stores and materials. The bulk of the remainder is not available in liquid form, having been applied within the undertaking to capital works required in order to keep it up to date, and to capital expenditure necessary to give effect to all the various legislative measures in which transport has been involved during the past twelve years. In the normal course fresh capital would have been raised for these purposes. But as proprietors realise our financial position had long made that course impracticable. In consequence it was only in the depreciation funds that money could be found to meet the heavy obligations imposed upon us, obligations which we had to meet if we were to carry on business. No one can foresee the extent or magnitude of the further liabilities in which the circumstances of the time may involve the company. The resources, in fact, on which we can draw to meet such liabilities would not exceed one-sixth of the nominal amount of the depreciation funds. That is all the margin we have against the risks of these times.

On the sums thus set aside you will be aware that income tax is levied. The amount required for depreciation at present-day replacement costs is inevitably high; the rate of income tax also being high the total tax payable on the amount transferred is very considerable. For 1940 it represents over £27,000. Had the company's regular practice been followed of charging that payment to revenue the divisible surplus for the year would have been reduced from £35,094 to the comparatively small figure of £8,094. But this matter is a matter which has also to be looked at from another side. It is more than could be expected of human nature that proprietors, in a year when gross receipts in all increased by some £205,000, should be asked to accept a position in which they would still receive no remuneration for the use of their undertaking while contractors, suppliers, and employees between them received additional payment to the tune of nearly £180,000. On no conception of "social justice" could proprietors be expected, not only to provide all new capital required in the undertaking but to be content with receiving no return either on it or on their original investment, in times when every other party, having always had payment out of the undertaking, was demanding and receiving payment of greatly increased sums. To ensure at least an instalment of justice for proprietors the directors, after carefully balancing the needs of the depreciation funds, are recommending that a year's dividend be paid on the guaranteed stock out of a surplus made sufficient for the purpose by charging the income tax arising on transfers to depreciation funds to those funds, and not as hitherto to revenue. This course is unusual and has the effect of reducing the appropriate transfers to depreciation funds by the amount of income tax charged to the funds. The amount so charged is recoverable, in a proportion depending on the rate of income tax, if and when the actual expenditure on renewals exceeds the provision. But with the present limitations on the supply of stores and materials required for renewals work, there can be no certainty as to whether and when that event will occur. For the time being we may fall into arrears in respect of some renewals, while there is, on the other hand, the risk that under conditions resulting from the war we may be faced with heavy unforeseen expenditure in order to keep services in operation. In these circumstances, it is essential to sustain the depreciation funds as the source from which we would have to meet such expenditure. But a dividend can be paid on the guaranteed stock which will incidentally make it clear that, granted that the undertaking must be maintained as an essential service, proprietors alone are no longer going to bear all the sacrifices required to maintain it.

Main Factors in Receipts and Expenditure

An analysis of the principal items of increase on both the receipts and the expenditure sides will be of interest. Total passenger receipts increased by 13 per cent. The total number of passenger journeys, at rather more than 9½ millions, was the greatest on record in the history of the company. Merchandise receipts increased by 18½ per cent. and coal receipts by 19½ per cent. The total number of live stock carried was the greatest since the year 1923. The number of passengers and the tonnage of goods which depended, and increasingly depend, on the railway for conveyance are proof positive of the claim so often advanced at these meetings, and as often superficially scorned elsewhere, that the railways are the backbone of public transport. On the expenditure side the company has had heavy liabilities to meet. Payments for coal involved us in an additional £45,273 and its price shows no sign of halting in its steep ascent. Other stores and materials cost an additional

£35,000. Expenditure on salaries and wages increased by about £100,000, of which 60 per cent. was due to increases which had to be made in the rates of salaries and wages and 40 per cent. to the employment of additional staff to cope with the increasing traffics and with maintenance work. The increases in the rates of salaries and wages which applied only to part of last year will operate throughout the whole of the present year, and therefore will involve us in a larger bill even for handling the same amount of traffic. When it is considered that the economy of both parts of Ireland has suffered, and is now suffering, serious dislocation and that shortage of materials and other causes are creating unemployment in a number of trades and industries, the fact that the company's staff has not only received substantially higher rates of pay, but has also added substantially to its numbers, shows that by comparison it is fortunately placed.

Net receipts from hotels, refreshment rooms, and cars declined by £393. This was due mainly to a falling off in the receipts from the dining and buffet cars due to the restrictions on travel and the consequent reduction in excursions. The other receipts under this item in the accounts were satisfactory. Net receipts from road transport were down by £3,838. Increases in wages, and in the prices of fuel oil and petrol cost us, however, more than £6,000. At 1939 wages and prices the results of working our road transport services would have shown a substantial improvement. We have taken steps to limit those disturbances in our accounts, due to fluctuations in the value of investments, which in recent years have played a disproportionate part in affecting our results. The bulk of our holdings in un-dated securities has been sold and the proceeds re-invested in securities of very short maturity. We thereby suffer some loss in income but reduce the risk during the next few years of having to find any substantial sum to meet losses in the capital value of our holdings.

In the balance sheet there are some important changes. The year 1940 commenced with a debt to our bankers of £137,169. To render our position more flexible under conditions which may arise out of the emergency investments were sold from time to time towards discharging that debt with the result, which you will observe, that cash at bankers and in hands, as at December 31 last, stands at the figure of £47,515. In consequence our investments which represented the sum of £462,390 in the 1939 accounts now stand at the lesser figure of £371,634. The value of the stock of stores and materials has risen from £173,274 to £270,537 mainly because of such special purchases as we were able to make in face of the growing shortage and increasing cost of supplies. Despite the increased total figure our stocks in some respects are unavoidably low. There may, on this account, be unfortunate consequences to the public folly which allowed the railways to fall into such financial straits before the war that their resources were not sufficient to enable them to hold adequate stocks bought at normal prices.

Peat as a Substitute for Coal

During the past year we have been conducting intensive experiments in the use of peat for firing locomotives. Those experiments have shown that, with proper preparations, peat is an effective substitute for coal at present prices for branch line working. We have procured a stock of such peat as is available and the experiments are continuing, with confidence that a higher efficiency can be attained. At the same time a technical investigation is proceeding into possible economies in the use of coal which already has resulted in a definite saving in coal consumption. We also have our proved oil-burning equipment for locomotives available. New coaching stock has been put on the rails provided, for the convenience of passengers, with tables which fold flat into the panelling. This stock reflects credit on the progressive spirit in the works at Dundalk. The re-modelling of the Dublin goods yard has been completed. Really admirable facilities have thus been provided for the easy handling under cover of every type of goods, whether brought by road or rail, and the resultant economies in working have more than justified the cost of the scheme. Within our limited financial capacity some of the refreshment rooms, selected for their potentialities, are being modernised and we feel no doubt that the expenditure involved will prove remunerative. A modern fully-equipped road transport garage and service station has been erected near Amiens Street with the helpful co-operation of the London Midland & Scottish Railway Company, which I am glad to have this opportunity of acknowledging. Proprietors who can take time to inspect it will find in its layout, equipment, and facilities much to interest them. During the year it was decided that the company should organise its own fleet in Dublin of horse-drawn vehicles, a development which has proved in the circumstances highly provident. Under our prize scheme for the permanent way men competition was again so keen, and the general merit of the work so high, that the judges had the greatest difficulty in placing the various gangs, prizes being won only by the narrowest of margins. In all that conscientiousness and initiative can do with limited financial resources our officers and staff are maintaining and actively developing the undertaking. Let us hope that it will not be thought and labour lost on a community careless of economic essentials.

Transport Legislation

I have referred at previous meetings to the general question of transport legislation following the inquiries set up by the Governments in Dublin and Belfast. The report of the Dublin Tribunal has not yet been published and there has been no indication of the lines that legislation may take arising out of that investigation. The Joint Select Committee in Belfast published its report, and the Government has intimated that the transport position has been having its attention. The situation which has developed as the result of the war has made many temporary changes in the circumstances of public transport and has resulted in considerable quantities of traffic coming again to depend on the railways. While this has meant large increases in receipts there have been almost equally large increases in expenditure. The improvement in the railway position has been, therefore, more apparent than real and far less, as I have said, than is essential for future stability. It is to be hoped that the authorities responsible for planning the future of transport will not be lulled by the present abnormal conditions into thinking that the need for a sound realistic handling of a problem which is now well understood has grown less urgent.

The lessons to be learned from the past year, and the lessons that are inevitable in the present year, surely are indisputable. Is it too much to ask, now that public dependence on the railway system can no longer be denied, that all the proprietors have done for years—without return—to keep it in efficient operation should be recognised, generously and not grudgingly, in consolidating public transport, while there is time, into a road and rail system capable of surviving the profound economic dislocations which must follow this war?

No one can anticipate coming events or prophesy what our results may be in the present year. The officers and staff have tackled energetically the innumerable new problems and duties, including local defence organisations, A.R.P., fire fighting and ambulance services, presented by the abnormal circumstances of the time. Though a number of the staff with long service retired during the year, their successors show no less ability and zeal. The community owes an unacknowledged debt to the railwaymen who in the worst years of public indifference and neglect never allowed to rust or deteriorate that technical skill on which the community is now glad to be able to rely.

The report and accounts were adopted.

MANCHESTER SHIP CANAL COMPANY.—Sir Frederick J. West, the Chairman, presiding at the annual meeting on February 28, said that expenditure on Ship Canal, Bridgwater Canals, and railways totalled £1,326,670, which was less than it would have been had the company been able to effect renewals and carry out repairs on the basis of a normal year. Provision had been made in accounts for £125,000 under the heading of "deferred maintenance." This policy would commenditself to shareholders on the grounds of prudence and the course adopted was essential if the company was to benefit in its excess profits computations from the allowance granted for deferred repairs and renewals.

BELFAST & COUNTY DOWN RAILWAY COMPANY

Need for reorganisation of transport—Lessons of the last war

The annual general meeting of the Belfast & County Down Railway Company was held at Queen's Quay, Belfast, on February 27, Mr. James Hurst, J.P., Chairman of the company, presiding.

The Chairman, in the course of his speech, said that the continuance of the war had been responsible for a measure of prosperity such as they had not enjoyed for a considerable number of years past. At the same time the position was difficult, and he was not going to make any prophecy as to what would happen on the cessation of hostilities. Since their last meeting, and in consequence of the acquisition in August last by the Ministry of Finance, Northern Ireland, of the holdings of "A" and "B" Road Board stocks held by the railways, the relations which then existed between the railways and the Road Board had considerably altered. The pooling of traffic receipts created by the Road & Rail Transport Act, 1935, had never come into operation; but legally, the pool and the various arrangements under the 1935 Act continued. The position, therefore, awaited unravelling by those responsible for that unprecedented situation.

The board was definitely of the opinion that transport in Northern Ireland would require reorganisation. The problem was one which should not be relegated to the future, but should be tackled by all the parties concerned without delay. After the war there should be a unification of transport in Northern Ireland to ensure an elimination of wasteful competition, and at the same time to provide an adequate service for the public. The experience of the transport world after the last war, when the flooding of the market with war vehicles for road use resulted in a supply of transport facilities very much in excess of traffic requirements, should be avoided.

Although receipts during the year under review had increased very considerably, on the other side there had been a very steep increase in expenditure—both wages and materials were affected. With prices and costs still continuing to rise, the position during the current year was somewhat uncertain, and caused concern as to the possibility of obtaining supplies of materials for essential maintenance. It would appear that should rising prices of stores and materials still continue it might be necessary for the company to seek a further increase in rates and charges.

Reviewing the results of the purely railway working, the following facts were disclosed: gross receipts, at £206,240, showed an increase of £45,100, or about 28 per cent., and analysis showed: season tickets, receipts increased by £11,126; workmen's tickets, increase in receipts of £3,940. A passenger traffic analysis showed the following: first class passengers, increased receipts £2,060; second class increased receipts £1,220; third class, increased receipts, £17,773. Exclusive of season ticket holders the company had carried 3,355,000 passengers, an increase of nearly 425,000 on 1939, at the average fare per passenger of 7·85d. Merchandise and mineral traffic had increased by nearly 18,000 tons; the receipts were £9,035 more than in 1939. The number of animals carried was 111,435, an increase of 48,231. In receipts the increase was £1,237.

Accounts showed that when they excluded £12,000 transferred to the renewal funds, the amount expended during the year was £184,979, as compared with £156,149 in 1939, an increase of £28,830, or 18·5 per cent. With an increase of £45,100 in receipts, and £28,830 increased expenditure, they were left with a profit of £21,261 on purely railway working, £12,000 of which had been allocated to renewal funds, leaving £9,261. To that figure must be added hotel profits of £3,799 and miscellaneous receipts of £6,426, leaving £19,485 15s. 7d. as net income. When they deducted their fixed charges of £1,390 the dividends on debenture stocks for the year of £12,967, the 4½ per cent. "A" preference stock dividend for the half year amounting to £1,125, and the dividend on 3 per cent. baronial guaranteed shares of £510, they were left with a carry forward of £3,494.

It was regretted that these results did not permit of the payment of any dividend in respect of the 5 per cent. and 4 per cent. preference stocks or on the ordinary stock. It had been a case throughout the year of increased expenditure against increased receipts not leaving a sufficient margin of net receipts to remunerate the whole of their capital.

The working of the hotel and refreshment rooms showed a net profit of £3,799, which was an improvement of £1,013 over 1939. Alterations in salaries and wages of the company's employees entailed an expenditure of over £9,500.

The report and accounts were adopted.

The Airways of East Asia

In view of the recent trend of political developments in the Far East, and the extensive disorganisation of land services as the result of the Japanese invasion of Chinese territory, special interest attaches to the air lines working in the areas concerned. In Japanese and Japanese-controlled territories the Ministry of Railways in Tokio appears to exercise wide powers of control over all forms of transport, and last autumn, in order to effect the traffic co-ordination which it desired, this Ministry drew up combined regulations for through traffic in Japan, Manchukuo, and occupied China. These regulations were prepared in collaboration over 14 area traffic organisations. The principal air lines in the Japanese sphere of influence in East Asia are in the hands of three companies of which brief details are as follow.

The Dai Nippon Airways Company, established in September, 1939, by merging the Nippon Air Transport and the International Aviation Companies, now operates regular services over routes totalling 10,448 miles. The principal services are: Tokyo—Fukuoka—Dairen—Hsinking; Tokyo—Fukuoka—Tsingtao—Peking; Tokyo—Fukuoka—Shanghai—Nanking; Fukuoka—Taihoku (Formosa); Yokohama—Saipan—Palau (the South Seas); and Tokyo—Sapporo (Hokkaido). A 3,107-mile air mail service between Tokyo and Bangkok, the capital of Thailand, was opened on June 10, 1940.

The Manchurian Airways Company was established through Manchukuo-Japanese collaboration. The principal services under its control are: Darien—Chiamuszu; Mukden—Antung—Dairen; Mukden—Chengteh; Hsinking—Linkiang; Hsinking—Seishin (North Korea); Hsinking—Chinchow; Mukden—Peking; Dairen—Peking; Harbin—Chiamuszu—Heiho—Moho; Mutankiang—Harbin—Tsitsihar; and Tsitsihar—Manchuli.

The China Airways Company was formed towards the end of 1938 through co-operation between the new *régimes* of Peking, Nanking, and Inner Mongolia, the defunct Nippon Air Transport Company, and the Huitung Aviation Company (which was established before the beginning of the present hostilities by the Hopei-Chahar Political Council authorities and the Manchurian Airways Company), is now operating 1,985 miles of principal services, which are: Peking—Dairen; Peking—Paotow; Peking—Shanghai; and Shanghai—Hankow.

Third B.B. & C.I.R. Spitfire

Up to February 25, subscriptions to the Bombay Baroda & Central India Railway Warplanes Fund has amounted to £15,000, sufficient for the purchase of three fighter planes. It will be remembered that this railway was the first in the Empire to raise by voluntary contribution from its staff of all grades, the sum needed for a fighter. Also that a second fighter plane was subscribed for by November 4, as mentioned on page 76 of our January 17 issue. *B.B. & C.I. Railway No.* 3, as the third plane will presumably be called, may now be expected to mature shortly.

QUESTIONS IN PARLIAMENT

Lost Goods

Mr. O. E. Simmonds (Duddeston—C.), on February 19, asked the Minister of Transport if he would give the approximate percentage of goods accepted for carriage by the British railways which was lost.

Lt.-Colonel Moore-Brabazon (Minister of Transport): The information is not available. To obtain it would involve a great deal of labour and expense which would not be justified in present circumstances.

Mr. Simmonds: Would not the Minister make inquiries from the industrial associations, when he may find there are serious hold-ups in war industries, representing substantial losses?

Lt.-Colonel Moore-Brabazon: I will make those inquiries.

Wages of Railway Workers

Sir William Davison (South Kensington—C.), on February 20, asked the Minister of Labour what was the total increase in wages and wartime allowances granted to railway workers since the beginning of the war; whether such increases were comparable to those granted in other industries; and whether the Government had now given further consideration to the question of fixing a standard wage for industries concerned with the war effort.

Mr. Ernest Bevin (Minister of Labour): Apart from certain increases in the wage rates of lower paid workers which, though operative from the end of October, 1939, were awarded in respect of claims made before the outbreak of war, the wage increases granted to railway workers since the outbreak of war amount to 7s. a week, in the case of conciliation grades, 8s. in the case of shopmen, and £18 per annum in the case of salaried staff. There have been corresponding increases for women and juveniles. In addition the lower paid workers received, shortly after the outbreak of war, increases varying from 6d. to 5s. a week as a result of an increase in the weekly minimum rates of men and women in the conciliation grades. The average increase in rates of wages varies widely in different industries. In all the industries combined, excluding agriculture, it is estimated that the average is about 14 to 15 per cent. As to the last part of the question, I have nothing to add to the statement made on January 21.

Sir W. Davison: Does not the Government consider it desirable that increases of wages, which are mainly due to the increase in the cost of living, should be generally comparable in all industries, and that it is undesirable that smaller industries which are not as highly organised as the railways and other big industries should have the same advantage as those which are highly organised?

Mr. Bevin: The Government are averse to a political settlement of wages. We believe that if it were introduced, it would have the same effect as it did in the end of the last war, when it led to rapid and disastrous inflation. The second point is surely unjustified, because powerful unions like those of the railwaymen and engineers have refrained from using their power, and have referred their cases to arbitration. Surely it is not suggested that arbitration courts would be influenced in their decision as to whether a trade was or was not well organised. They have to decide cases on the facts.

Mr. Frank Pick

Mr. F. Montague (Parliamentary Secretary to the Ministry of Transport), on February 25, informed Mr. W. Thorne (Plaistow—Lab.) that the investigation into the carriage of traffic on canals and inland waterways had already begun and was being proceeded with as a matter of urgency. Mr. Frank Pick was receiving a salary at the rate of £2,000 per annum.

Length of Trains

Mr. J. J. Tinker (Leigh—Lab.), on February 26, asked the Minister of Transport if he was aware that many trains, owing to their excessive length, had to draw up twice at stations; and would he consider devising some scheme by which passengers for any particular station could be notified to get into a certain part of the train.

Lt.-Colonel Moore-Brabazon (Minister of Transport): In order to accommodate the passengers, many trains have to be made up to abnormal lengths, and though the railway companies' staff endeavour to arrange that passengers are loaded into that part of the train which stops first at platforms where the whole train cannot be accommodated, it has been found impossible to ensure this in all cases.

Mr. Tinker: Is the Minister not aware that there have been many accidents in the blackout, through people getting out of that part of a train which is not drawn up at a platform? Will he endeavour to expedite steps to deal with this matter?

Lt.-Colonel Moore-Brabazon: I drew the attention of the railway directors to questions asked by my hon. friend last week, but they pointed out that it is difficult to get people to move from seats once they have taken them.

Mr. R. J. Taylor (Morpeth—Lab.): Has it not been the practice at many stations to mark certain coaches for certain places? Could that system not be extended?

Lt. - Colonel Moore - Brabazon: Measures of that sort are being carried out.

Injuries to Railway Workers

Mr. W. Dobbie (Rotherham—Lab.), on February 26, asked the Minister of Transport, in view of the great decrease in the number of injured workmen reported by the railway companies to the Ministry in 1940 as compared with 1939 and 1938, if he would inform the House of the difference in the nature of accidents which call for report at the present time as compared with the two previous years.

Lt.-Colonel Moore-Brabazon: Before September 1, 1939, the railway companies were required to report all injuries to their servants involving an absence from duty of more than 3 days, but during the war period, so far as injuries are concerned, reporting has been limited to cases of serious personal injury.

Railway Charges

Mr. L. Silkin (Peckham—Lab.), on February 26, asked the Minister of Transport whether, in view of the fact that the increased revenue for 1940 of the main-line railways and the London Passenger Transport undertaking ex ceeded the increased working costs of these undertakings by nearly £7,000,000, he would give an assurance that no further increases in railway charges would be sanctioned in respect of the increased working costs in 1940.

Lt.-Colonel Moore-Brabazon: The figure mentioned does not take account of a number of items, including losses on collection and delivery services and other ancillary businesses, which reduce the £7 millions to about £2½ millions. The increase in net receipts on railway working was due in the main to increased traffic and was wholly earned in the first six months of 1940, in comparison with the first six months of 1939, when traffic was low. My hon. friend is, I know, fully aware of the principles underlying the financial arrangements at present existing between the Government and the controlled undertakings and he must, therefore, realise that I cannot give him the assurance for which he asks.

Mr. Silkin: Does not the Minister realise that there will be very considerable dissatisfaction in the public mind if fares are increased while the railway companies are making increased profits?

Lt.-Colonel Moore-Brabazon: I am fully aware of that.

Heating of Trains

Mr. R. W. Sorensen (Leyton West—Lab.), on February 26, asked the Minister of Transport whether he was aware that many trains were not properly heated and that Servicemen and other passengers had compained of this during journeys taken over an hour.

Lt.-Colonel Moore-Brabazon: If my hon. friend will furnish me with details of any complaints I shall be happy to have enquiries made.

Accidents at Euston Station

Mr. I. C. Hannah (Bilston—C.), on behalf of Sir John Graham Kerr (Scottish Universities—C.), on February 26, asked the Minister of Transport

how many accidents had happened through persons stepping off the edge of platforms at Euston station during blackout periods, and how many had involved injuries serious enough to require hospital treatment, and what steps had been taken to minimise the risk of accidents at this station.

Lt.-Colonel Moore-Brabazon: The company is required to report fatal accidents only and those involving serious injury; since September 1, 1939, four accidents in the latter category have been reported which resulted from persons stepping off platforms at Euston station during the blackout; I deeply regret that in one of these my hon. friend suffered a grave injury. I am informed that platform edges are now whitened for a width of 8 in. with a hard surface paint, and that instructions have been given for this to be washed daily before the blackout period begins.

London-Durham Service

Mr. J. Batey (Spennymoor—Lab.), on February 26, asked the Minister of Transport if he was aware that on the previous Thursday nearly 200 passengers from London to Durham, and intermediate stations, were sent from Darlington to Bishop Auckland and there left stranded; and would he enquire why the officials at Darlington and Bishop Auckland were so indifferent to the getting of passengers to their destinations and consider expediting the service to Durham which last Thursday took 14 hours from King's Cross.

Lt.-Colonel Moore-Brabazon: I am making enquiries and will communicate with my hon. friend.

Travelling Facilities

Viscountess Astor (Plymouth, Sutton —C.), on February 26, asked the Minister of Transport whether, in view of the difficulty experienced by Civil Defence workers in making long journeys to and from the places to which their families had been evacuated in the period of three days covered by the cheap railway vouchers issued to them, he would consider extending the period covered by these vouchers to seven days.

Lt.-Colonel Moore-Brabazon (Minister of Transport) wrote in reply: The cheap railway tickets were introduced primarily to enable parents to visit their evacuated families. In answer to questions on December 5 last, I announced in this House that the period of validity of these tickets would be extended where necessary to three days to ensure that the time spent in the reception areas is not unduly short. I do not think it would be reasonable to expect the companies to go further than they have gone.

G.W.R. Dinner Menu

Mrs. M. Tate (Frome—C.), on February 27, asked the Parliamentary Secretary to the Ministry of Food whether he was aware that, on Sunday, February 23, the Great Western Railway trains travelling between Plymouth and London were serving for dinner: thick soup, chicken and vegetables, fruit tart, and cheese and biscuits, and whether, in view of the serious shortage of cheese and its high nutritive value, he would, for the present, reserve it for agricultural workers, coal miners, and quarrymen, who normally took lunch out with them and whose heavy manual labour entitled them to it.

Major G. Lloyd George (Parliamentary Secretary to the Ministry of Food): The Minister of Food has just issued an Order which will have the effect of preventing the service or consumption of meat, fish, or poultry, and cheese at the same meal. The question of making improved arrangements for the distribution of cheese is being urgently considered.

Mr. Charles Williams (Torquay—C.): Is the Parliamentary Secretary aware that on the same train and line on February 21 and 24 I was, quite rightly, not allowed cheese and meat?

Mrs. Tate: I must insist that the facts I have given are absolutely correct.

Prevention of Line-side Fires

The prevention of fires started by sparks from locomotives is a very live question on the Western Australian railway system during the summer months. The fuel used is coal from the local mines at Collie, which throws sparks in considerable quantity. A great deal of thought has been given to devising an efficient spark arrester, and the type adopted for general use is the H.D.D. It is a local invention and is the most efficient for local conditions which has been found so far, and while not completely effective in stopping the emission of sparks, it has reduced very materially the number of sparks which can escape. The majority of engines are fitted with this device. Each arrester is examined both before departure from and after arrival at depot on every trip of the engine, and so long as the equipment is maintained in good order and condition, no liability is accepted for any fires alleged to be started by an engine so fitted. On engines not fitted with the H.D.D. spark arrester, imported coal of a non-sparking type is used when travelling through agricultural areas liable to damage by fire in Western Australia.

In addition to the steps taken to prevent the emission of sparks from engines, precautions taken to obviate the spread of fires include the chipping or ploughing of firebreaks on the outer edge of the railway reserve and the burning off of grass, scrub, etc., on the railway reserve in all districts. In addition owners of properties adjoining the railway are exhorted and encouraged to burn firebreaks at reasonable distances from the line on their own land, while assistance is given by gangs in fighting any fires which occur in proximity to the line.

The cost of these various precautions is an appreciable burden on the railway finances, and indicates the genuine desire of the department to prevent loss to landholders from fire. Despite the action taken, fires do occur for which the blame is usually laid—often unjustly—on the railway administration, but having taken all reasonable precautions to prevent fires the department is in a position to resist the claims for compensation, so long as the equipment is maintained in good condition.

Lecture on Indian Railways

A lecture on Indian Railways was recently given by Mr. C. G. W. Cordon, Agent and General Manager of the Madras & Southern Mahratta Railway, at the Madras Y.M.C.A. After dealing with the financial history of Indian railways, the lecture provided a mass of interesting statistical data. The total length of railways in India was, he said, 41,133 route miles, comprising of 21,164 miles of broad gauge, 13,861 miles of metre gauge, and 4,107 miles of narrow gauge lines. The rolling stock owned by the Indian railways of Class I was as follows:—

	B.G.	M.G.
Locomotives	5,230	2,319
Bogie passenger carriages	4,500	3,300
Goods wagons of different types (B.G. & M.G.) ...	208,000	

Referring to the criticisms of the amenities provided for third class passengers, Mr. Cordon said that the transport of passengers at the low rate of three pies (¼d.) a mile was only possible by keeping the working expenses down to a minimum, and the improvement of travel amenities was regulated by the availability of funds. Mr. Cordon next endeavoured to remove the misunderstanding that was widely current regarding company-managed railways. Quoting figures about the working of the M. & S.M.R., he showed that, apart from the guaranteed interest of 3½ per cent. on the capital provided by the company, the share of the latter in the surplus available after paying interest charges and other expenses would be negligible. If there was a surplus of Rs. 100 lakhs, the company would get only Rs. 8·58 lakhs, out of which income tax and super tax had to be paid and the amount finally available would be only Rs. 6·70 lakhs.

The importance of the railways as employers of labour was finally stressed by the lecturer. In the year ended March 31, 1939, State-owned railways employed 640,412 persons and the salary bill amounted to Rs. 31·80 crores.

Average Railway Wage in U.S.A.

The average hourly remuneration of a railway employee in the U.S.A. is 74·8 cents, or about 3s. For an eight-hour day, therefore, the average employee earns £1 4s.

STAFF AND LABOUR MATTERS

Salaries of Insurance Clerks

On claims made by the Guild of Insurance Officials against a number of insurance companies, the National Arbitration Tribunal, in recent awards, has laid down the following minimum annual salaries for clerical staffs of the respective undertakings :—

The Commercial Union Assurance Co. Ltd. and allied companies

	Male staffs			Female staffs		
	London	Provinces		London	Provinces	
		Area "A"	Area "B"		Area "A"	Area "B"
Age	£	£	£	£	£	£
18	75	70	65	70	65	60
19	85	80	75	78	73	68
20	105	100	95	86	81	76
21	120	115	110	101	96	91
22	135	130	125	109	104	99
23	150	145	140	117	112	107
24	165	160	155	127	122	117
25	180	175	170	137	132	127
26 and over				150	145	140
26	195	190	185	—	—	—
27	215	205	195	—	—	—
28	230	220	210	—	—	—
29	245	235	225	—	—	—
30 and over	260	250	240	—	—	—

Area "A" comprises Bristol, Birmingham, Cardiff, Edinburgh, Glasgow, Leeds, Liverpool, Manchester, Newcastle, and Sheffield.

The firms are to continue a scheme of "grants in aid" and on a claim for a cost of living bonus no award is made.

The Vulcan Boiler & General Insurance Co. Ltd.
The National Boiler & General Insurance Co. Ltd.
The British Engine Boiler & Electrical Insurance Co. Ltd.

Age	Males £	Females £
16	50	45
17	60	53
18	70	66
19	80	72
20	100	81
21	120	94
22	130	104
23	145	111½
24	160	124½
25	175	132
26 and over	—	143
26	190	—
27	200	—
28	210	—
29	220	—
30 and over ...	230	—

The British Engine Boiler & Electrical Insurance Co. Ltd. is to continue a claim of "grants in aid" to the staff and the other companies are to pay, in addition to the foregoing scales, a cost-of-living bonus of 5s. a week to males and females 21 years of age and over, and 4s. a week to those under 21 years of age.

Dock Labour

In order to effect the quicker turn-round of ships, the Minister of Transport is to become the employer of all registered dock workers at the Mersey ports, including Liverpool, Birkenhead, Manchester, Preston, Garston, Bromborough, Ellesmere Port, Partington, Widnes, Runcorn, and Weston Point. This was announced by Mr. Bevin, Minister of Labour on February 27, who said that transport is becoming the key to victory and its effectiveness will determine the duration of this struggle. It depended on the turn-round of shipping whether the food supply of the country was maintained at a proper level, and a 40 per cent. quicker turn-round was easily attainable if everyone pulled his weight.

The scheme for the North-Western Region will come into force at the beginning of the pay week which commences next after Monday, March 10. An opportunity to join it is offered to all men available for dock employment during the week ending March 7, and to any other dock workers whom the Minister, on the advice of the labour superintendent, may later take into employment. Any man unwilling to accept employment under the Minister of Transport must notify the fact and surrender his port registration book. Each man must accept any employment offered to him in connection with the handling of coal or cargo, clearance of debris, fire prevention services, or any other work considered necessary for the clearance of the port area. If required a man must work a minimum of 11 turns a week—a turn consists of four hours—day or night, and also such additional turns (including Saturday afternoon) as the labour superintendent considers necessary and reasonable. The guaranteed minimum payment will be for 11 turns a week at the agreed port rates. Saturday afternoon work will always be additional to the guaranteed weekly wage. For Sunday work one-half of the timeworkers' rate will be added to the piece-work earnings, but existing piece rates will not be affected. Absentees will lose the wage guarantee for the week. There may also be disciplinary action. Employment will be terminable by one week's notice.

There will be a registration of "approved employers"—master stevedores, master porters, etc. Every week the employer must pay to the Minister the gross wages earned by each man and also a percentage extra, to be credited to the management fund. The intention is that the scheme shall be self-supporting. An approved employer must also keep the Minister indemnified in respect of all accident compensation schemes, etc. Where the Regional Port Director has determined the charges to be made for any services an approved employer must not charge more. It is not intended to interfere with the freedom of choice between approved employers which shipowners and traders now exercise.

It is proposed to transfer the dock workers of the Clyde region to the Minister of Transport in the near future.

Railway Wages

The executive committees of the National Union of Railwaymen, the Associated Society of Locomotive Engineers and Firemen, and the Railway Clerks' Association, held a joint meeting in London, on February 28, to consider further the position arising out of the negotiations on their claims with the Railway Executive Committee. It was decided to refer the claims to the Railway Staff National Council and a meeting of that body has been arranged to take place today (March 7). It is unlikely that agreement will be reached at the meeting of the Railway Staff National Council, and the next stage in the Machinery of Negotiation for Railway Staff is a hearing before the Railway Staff National Tribunal, of which Sir John Forster is the Chairman.

Contracts and Tenders

The Fusarc Welding Co. Ltd., of Letchworth, has recently completed an order for two carriage and wagon wheel type automatic welding plants for the Federated Malay States Railways.

The Associated Equipment Co. Ltd. has received from the Devon General Omnibus & Touring Co. Ltd. an order for 5 Regent double-deck buses. Other vehicles of A.E.C. make acquired by this company within recent years include 26 in 1939, 32 in 1938, and 13 in 1937.

The Peruvian Corporation has placed an order with John W. Harker & Company for the supply of black bolts, nuts, and rivets, to cover the annual requirements of all the Peruvian railways.

Forthcoming Meetings

Mar. 7 (*Fri.*).—**Great Southern Railways Company.** (Ordinary general) Gresham Hotel, Upper O'Connell Street, Dublin, at 2 p.m.

Mar. 7 (*Fri.*).—**London Midland & Scottish Railway Company** (Ordinary general), Friends House, Euston Road, London, N.W., at 11.30 a.m.

Mar. 7 (*Fri.*).—**London & North Eastern Railway Company** (Ordinary general). Grosvenor House, Park Lane, W.1, at 2 p.m.

Mar. 11 (*Tues.*).—**Mersey Railway Company** (Ordinary general), Winchester House, Old Broad Street, E.C.2, at noon.

Mar. 12 (*Wed.*).—**Great Western Railway Company** (Annual general), Paddington station, W.2, at 11.30 a.m.

Mar. 12 (*Wed.*).—**Southern Railway Company** (Annual general). Charing Cross Hotel, Strand, W.C., 11.30 a.m.

Mar. 24 (*Mon.*).—**Great Indian Peninsula Railway** (Annuitants annual), Elmhyrst, Epsom Road, Guildford, Surrey, at 12 15 p.m.

Notes and News

Polish Railway Accident.—A head-on collision occurred in Warsaw recently, according to Reuters, between a goods train and a Warsaw-Siedlce passenger train. Ten persons are reported to have been killed.

Canadian Pacific Railway.—The gross earnings for the month of January were $14,685,000, an increase of $2,440,000 as compared with January, 1940. Working expenses at $12,019,000 were $1,603,000 higher and net earnings at $2,666,000 registered an advance of $837,000.

Lisbon—Madrid Rail Service Restored.—Railway communication between Lisbon and Madrid, which was interrupted owing to damage done by the hurricane, was restored on February 27, according to a Havas Agency despatch from Lisbon. Telephone communication between Lisbon and Oporto is stated to have been restored on February 28.

Train Speeds during Alerts.—It has been decided that all classes of British main-line trains should run at normal speeds during daylight hours irrespective of air-raid alerts, and at speeds not exceeding 30 m.p.h. during alerts in blackout hours. At the beginning of the war a maximum speed of 15 m.p.h. was in operation during blackout hours. Since November 11, 1940, during daylight hours, passenger and braked goods trains (formerly restricted to 10 m.p.h.) have been permitted to travel at a maximum speed of 25 m.p.h. during alerts. For other goods trains the limit was then raised from 10 to 15 m.p.h.

The Welsh Highland Railway.—It has been reported to the Lleyn Rural Council that permission has been obtained to sell the disused track of the Welsh Highland Railway as scrap for munition purposes. Since the line ceased to be worked various councils which contributed to the cost of building the undertaking have advocated selling the rails for war purposes. At its meeting last week the Deudraeth Council disagreed with the proposal to sell the rails so far as concerns the section between Croesor Junction and Portmadoc as it was felt that this section of the railway was necessary for the future development of the Croesor and Rhosydd slate quarries; no objection was raised to the sale of the rails between Croesor Junction and Dinas.

Railway Earnings in 1940.—In dealing with British railway revenues in our issue last week it was pointed out that whereas in the first half of the year rather more than 18·5 per cent. of gross receipts was retained as net, in the second half the amount retained was just under 17·5 per cent. The actual figures in each case were: first half, gross receipts £116,458,000, expenditure £94,904,000, net receipts £21,554,000; second half, gross £131,534,000, expenditure £108,576,000, net receipts £22,958,000.

Railway Nationalisation in Spain.—On February 1 the whole of the broad-gauge railways passed into State ownership, under a Law dated January 24. The owning companies are bought out by the payment of the annuities provided for in the concessions, and the railways are to be worked by a corporation at any rate nominally independent of the Government. The Minister of Public Works, Señor Peña, describing the new legislation, explained the transport position in detail in an address to a distinguished gathering in Madrid on January 30. The Statute of 1924 had failed to provide a solution for the railway problem, complicated later by the increase in road transport. The civil war brought things to a climax. Some 20,000 wagons and 1,000 engines were destroyed, many bridges were demolished and hundreds of miles of track torn up. After the victory of the Caudillo, the Government lost no time in organising the work of reconstruction, but the European conflict had seriously interfered with plans, and the restrictions on petrol had had the effect of throwing an over-heavy burden of additional traffic on the railways in their crippled state. Now the question of transport is one of Spain's most vital problems. The nationalisation Law, which also provides for a grouping of narrow-gauge railways and a reorganisation of road transport, will, it is hoped help to a reconstitution, and the Government plans to spend during the present year 600,000,000 pesetas (about £15,000,000) on the construction and repair of railway material.

Irish Traffic Returns

IRELAND		Totals for 7th Week			Totals to Date		
		1941	1940	Inc. or Dec.	1941	1940	Inc. or Dec.
		£	£	£	£	£	£
Belfast & C.D. (80 miles)	pass.	2,584	1,967	+ 617	19,712	15,696	+ 4,016
	goods	1,172	493	+ 679	7,452	3,429	+ 4,023
	total	3,756	2,460	+ 1,296	27,164	19,125	+ 8,039
Great Northern (543 miles)	pass.	11,450	8,300	+ 3,150	80,600	59,350	+ 21,250
	goods	19,500	11,850	+ 7,650	103,150	83,050	+ 23,100
	total	30,950	20,150	+ 10,800	183,750	139,400	+ 44,350
Great Southern (2,076 miles)	pass.	33,431	24,749	+ 8,682	226,863	189,080	+ 37,783
	goods	53,058	43,321	+ 9,737	348,917	289,978	+ 58,939
	total	86,489	68,070	+ 18,419	575,780	479,058	+ 96,722
L.M.S.R. (N.C.C.) (247 miles)	pass.	6,580	3,660	+ 2,920	44,710	25,600	+ 19,110
	goods	6,450	3,720	+ 2,730	40,340	22,480	+ 17,860
	total	13,030	7,380	+ 5,650	85,050	48,080	+ 36,970

British and Irish Railway Stocks and Shares

Stocks	Highest 1940	Lowest 1940	Prices Mar. 4, 1941	Prices Rise/Fall
G.W.R.				
Cons. Ord.	52	22½	32½	−½
5% Con. Pref.	103½	58	86	−2½
5% Red. Pref. (1950)	105½	88	98½	−1
4% Deb.	107½	90½	103½	−½
4½% Deb.	108½	96½	107	−1
4½% Deb.	114¾	96	113½	—
5% Deb.	124	106	122½	—
2½% Deb.	66½	57	63	—
5% Rt. Charge	117¾	97	118	—
5% Cons. Guar.	117	90½	112	—
L.M.S.R.				
Ord.	24⅞	9	12	—
4% Pref. (1923)	60½	21⅜	35½	−1½
4% Pref.	70¾	35	49½	−4
5% Red. Pref. (1955)	94½	60	80½	−1
4% Deb.	101¾	81	98½	+½
5% Red. Deb. (1952)	109½	102	108	—
4% Guar.	93¾	65	88	+¼
L.N.E.R.				
5% Pref. Ord.	8⅜	1½	2¾	+⅛
Def. Ord.	4⅜	1¼	1½	−⅛
4% First Pref.	60	20	34½	−1¾
4% Second Pref.	22⅞	6½	12½	−⅛
5% Red. Pref. (1955)	80	34½	58½	+1
4% First Guar.	86¼	56	78	+½
4% Second Guar.	77½	37	64	—
3% Deb.	73½	54½	70½	−½
4% Deb.	97⅜	74	93	—
5% Red. Deb. (1947)	107	96¾	103	—
4½% Sinking Fund Red. Deb.	104	98	100½	—
SOUTHERN				
Pref. Ord.	79	34	46½	−1
Def. Ord.	22½	7	10	+½
5% Pref.	104½	58¾	81½	−1¾
5% Red. Pref (1964)	105	85	93½	−1
5% Guar. Pref.	116¾	90	113	+½
5% Red. Guar. Pref. (1957)	114⅞	94	109½	−1
4% Deb.	106¾	84½	103½	−¼
5% Deb.	122½	100	122½	—
4% Red. Deb. (1962–67)	106	96½	103	—
4% Red. Deb. (1970–80)	106⅜	93	103	—
FORTH BRIDGE				
4% Deb.	95½	87	91½	+5
4% Guar.	93½	81½	86½	+1
L.P.T.B.				
4½% "A"	116	103	111½	−1
5% "A"	121½	107	120	+¾
4½% "T.F.A."	105½	101	120½	—
5% "B"	116	102	106	−½
"C"	65½	24	34	+1
MERSEY				
Ord.	26	18½	23½*	—
4% Perp. Deb.	92½	86¾	91½	—
3% Perp. Deb.	68	63	62½	+2
3% Perp. Pref.	57	50¼	53½*	−1
IRELAND				
BELFAST & C.D.				
Ord.	4	3	4	—
G. NORTHERN				
Ord.	4¼	1½	4½	—
G. SOUTHERN				
Ord.	12½	4	8	—
Pref.	15½	6	10	—
Guar.	36	15	26	—
Deb.	55½	40	50	−2

* ex dividend

OFFICIAL NOTICES

OFFICIAL ADVERTISEMENTS intended for insertion on this page should be sent in as early in the week as possible. The latest time for receiving official advertisements for this page for the current week's issue is noon on Wednesday. All advertisements should be addressed to:—*The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

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Railway and Other Reports

Metropolitan Railway Surplus Lands Co. Ltd.—Net receipts for 1940 were £45,868, against £68,018. Interim dividend of 1 per cent. absorbed £26,409 and no further distribution is recommended. For 1939 total dividend was 2½ per cent. Amount carried forward is £22,708, against £3,249 brought in.

London Midland & Scottish Stock Conversion Trust.—The dividend declared by the London Midland & Scottish Railway Company on its ordinary stock will permit of a dividend of £1 5s. 7$\frac{13}{16}$d. per cent. on the 4 per cent. non-cumulative preference stock of the trust, against 17s. per cent. a year ago.

La Guaira & Caracas Railway Co. Ltd.—Payment is announced of 2½ per cent. on the 5 per cent. debentures on account of arrears to September 1, 1935, together with interest on arrears at 5 per cent. per annum to August 31, 1939, making a total of 3 per cent., less tax. The stock outstanding is £348,144.

Salisbury Railway & Market House Company.—The company's short line to the Southern Railway is worked by the latter under agreement. Net revenue for 1940 was £732, against £889, and after meeting preference dividend £60, and paying 5 per cent. on the ordinary capital, £670, £238 is carried forward.

Oldham, Ashton-under-Lyne & Guide Bridge Junction Railway Company.—The directors recommend a final dividend of 2$\frac{3}{8}$ per cent., making 4$\frac{3}{4}$ per cent., the same as for the previous year. After allowing for estimated settlement in respect of the period of Government control, there was a net revenue debit of £4,772 (against a debit of £3,762). The amount receivable from the L.N.E.R. and L.M.S.R. under the terms of the lease is £6,672 against £5,662.

Manchester Ship Canal Company.—The directors recommend the following dividends: 3½ per cent. on the Manchester Ship Canal Corporation preference stock; 3 per cent. on the preference shares; and 1½ per cent. on the ordinary shares. In each case the rates are the same as for 1939. Net receipts for the whole undertaking amounted to £1,133,445, compared with £798,682, an increase of £334,763.

Birmingham Canal Navigations.—The report for 1940 shows receipts from tonnage, wharfage and weighing, £83,912, a decrease of £6,901; net rents from property, at £34,662, were higher by £2,776. Expenditure was £82,737, an increase of £14,635, attributed to heavy charges for ice-breaking, increased A.R.P. expenses, special war advances to staff, etc. A sum of £6,848 is available for dividends (against £23,294) and the additional £90,735 required to make up a dividend of 4 per cent. will be provided by the London Midland & Scottish Railway Company under the terms of arrangement.

Oxford Canal Company.—Final dividend 2 per cent. making 5 per cent. for the year 1940 (against 8 per cent.).

Coventry Canal Company.—No final dividend (against 3 per cent.). Total for year 2 per cent. (against 6 per cent.).

Rochdale Canal Company.—Net revenue for the year 1940 is £9,725 (against £13,818). Final dividend is 1 per cent., making 2 per cent. for the year (against 2½ per cent.).

The Undertakers of the Aire & Calder Navigation.—No dividend is recommended on the ordinary capital for 1940. In 1939 a final dividend of 1½ per cent. was paid, making 3½ per cent. for the year.

Isle of Man Steam Packet Co. Ltd.—Net profit for the year 1940 was £38,909 (against £37,776). Income from traffic requisitions, and sundries was £496,785 (£555,312) and operating expenses were £384,281 (£390,230). Negotiations with Ministry of Shipping have progressed sufficiently to enable an estimate of £50,368 to be made of profit due from requisitions. The directors have set aside £25,000 towards overhauls deferred because of war conditions.

Bristol Tramways & Carriage Co. Ltd.—Final dividend is 4 per cent, making 8 per cent., tax free, for the year 1940 (same).

Lancashire United Transport & Power Co. Ltd.—Revenue of operating companies in 1940 amounted to £597,431 (against £502,590), and the profit for the year was £138,741 (against £112,246). Final ordinary dividend is 6 per cent., again making 10 per cent.

Tilling & British Automobile Traction Limited.—The directors recommend a final dividend of 4 per cent., plus 2 per cent. participating dividend, making 10 per cent. for the year on the cumulative 8 per cent. participating shares (same).

Thomas Tilling Limited.—Net profit for the year 1940 is £519,194 (against £531,019). Final dividend is 5 per cent., making 10 per cent. for the year (same). Allocation to general reserve is again £100,000, and the carry forward is £171,310, against £180,615 brought in.

Dublin United Tramways Co. (1896) Ltd.—For the year 1940 the directors recommend a dividend on the ordinary stock which, with the interim paid in August last, will amount to 4 per cent. for the year (same). The amount carried forward is £21,561, compared with £16,670 brought in.

Consolidated Signal Co. Ltd.—Profit for year to September 30 last is £22,318 (against £25,441). Ordinary dividend is 17 per cent. (same).

Birmingham Carriage & Wagon Co. Ltd.—Profit for the year 1940 was £65,991 (against £112,593). The dividend is again 7½ per cent.

Scottish Wagon Co. Ltd.—The directors recommend a further interim dividend of 5 per cent., making a total of 8 per cent. Last year a similar rate was paid in equal instalments.

British Wagon Co. Ltd.—Net profits for 1940 amounted to £15,827 (against £27,678). Final dividend is 12½ per cent., making 17½ per cent. for the year (against 20 per cent.).

Leyland Motors Limited.—The directors have not found it possible to prepare the final accounts for the year ended September 30, 1940, and, therefore, the ordinary general meeting has not been called at the normal time this year. The reason for the delay is that negotiations are still proceeding as to equitable prices for various Government contracts which were undertaken by the company during that financial period. The directors propose to pay an interim dividend on the ordinary shares at the rate of 10 per cent. per annum, less tax.

AMERICAN (U.S.A.) RAILWAY STATISTICS.—The preliminary summary, issued by the Interstate Commerce Commission, of statistics for all the steam railways in the United States having operating revenues over $5,000,000, is extended this year to give comparisons for four years instead of three. Accounting and statistical figures from the returns of the individual companies are given in the present volume for the years 1936, 1937, 1938, and 1939. Total figures by regions and districts for all Class I railways will be published later in the annual report of the Commission. The summary may be obtained from the Superintendent of Documents, Bureau of Statistics, Interstate Commerce Commission, Washington, D.C., price 75 cents.

Railway Stock Market

Sentiment in the stock and share markets has been dominated by the situation in the Balkans, and in many directions, business was insufficient to test quotations. Owing to the changed conditions resulting from the war and the new developments foreshadowed to reduce civil consumption and to transfer labour, materials and factory space to war production, it is very difficult to assess the outlook for many securities. Nevertheless, in numerous directions the stocks and shares of companies engaged in trades which are not essential to the war effort continue to be valued on a lower yield basis than securities of companies doing essential war work Reference has been made here on numerous occasions to the high yields obtainable on railway stocks, and so far as it is possible to judge, the latter are undervalued in relation to many other groups of securities, despite the uncertainty as to the basis on which the financial agreement with the Government will be revised The assumption in many quarters is that the minimum revenue guaranteed will be maintained, and this would allow of dividends on the junior stocks which would still show large yields at current prices At the present time it is impossible to form any definite view as to the outlook for securities other than British Funds, and in the circumstances it must be expected that investment buying will continue to centre on gilt-edged stocks. Possibly the Budget statement may provide more definite indications as to the Government's plans for industrial mobilisation.

In accordance with the general tendency on the Stock Exchange, home railway stocks have made lower prices, but this was attributed mainly to the small demand in evidence, no heavy selling having been reported. In fact, security values showed a much steadier undertone than might have been expected, bearing in mind the uncertainty as to the latest war developments and the many problems that will be raised by industrial mobilisation. Whereas the junior stocks were lower on balance, investment buying of debentures produced firmness in the latter, but so far as could be judged, demand did not extend to other stocks of the prior charge class, despite the attractive yields obtainable.

As compared with a week ago, Great Western ordinary stock declined a point to 32, and the 5 per cent. preference was no better than 85½, a decline of two points on balance. Great Western 4 per cent. debentures were only fractionally lower at 103. L.M.S.R. 4 per cent. debentures, however, made the slightly higher price of 98½, and the guaranteed stock at 87 was virtually maintained. On the other hand, L.M.S.R. 4 per cent. senior preference was reduced to 50, a decline of three-and-a-half points; the 1923 preference was 35½, compared with 37 a week ago, and the ordinary stock made the lower price of 11¾. As regards L.N.E.R. securities, the debentures showed firmness; the 3 per cents. held last week's improvement to 71; the 4 per cents. were a point higher at 94. The second guaranteed was around 64, and at 77 the first guaranteed was fractionally lower on balance. L.N.E.R. first preference was 33, which compares with 36 a week ago; the second preference failed to attract buyers, despite the very large yield, and was slightly lower at 12. Southern 4 per cent. debentures were firm and unchanged at 103; but the 5 per cent. preference declined further from 83½ to 81, which incidentally is four-and-a-half points lower than the equivalent preference stock of the Great Western Railway. Southern preferred ordinary, which a week ago was 47½, has since moved back to 45½, but the deferred at 9¾ was unchanged on balance. London Transport "C" remained at 33. Where changed, Argentine railway securities were lower in accordance with the surrounding trend on the Stock Exchange, but elsewhere, San Paulo ordinary was fractionally better. French railway sterling bonds relapsed and Canadian Pacific were unresponsive to the further traffic increase.

Traffic Table of Overseas and Foreign Railways Publishing Weekly Returns

	Railways	Miles open 1940–41	Week Ending	Traffic for Week: Total this year	Traffic for Week: Inc. or Dec. compared with 1940	No. of Weeks	Aggregate Traffics to Date: Totals: This Year	Aggregate Traffics to Date: Totals: Last Year	Aggregate Traffics to Date: Increase or Decrease	Shares or Stock	Prices: Highest 1940	Prices: Lowest 1940	Prices: Mar. 4, 1941	Yield % (See Note)
				£	£		£	£	£					
South & Central America	Antofagasta (Chili) & Bolivia	834	23.2.41	17,640	+ 1,140	8	136,410	145,900	— 9,490	Ord. Stk.	11¼	3½	4½	Nil
	Argentine North Eastern	753	22.2.41	ps. 105,400	— ps.21,700	34	ps. 5,094,700	ps. 5,260,700	— ps.166,000	,,	3½	1	2	Nil
	Bolivar	174	Jan. 1941	3,200	— 500	4	3,200	3,700	— 500	6 p.c. Deb.	6½	5	6½	Nil
	Brazil	—	—	—	—	—	—	—	—	Bonds	8	5	6	Nil
	Buenos Ayres & Pacific	2,801	22.2.41	ps.1,908,000	+ ps. 38,000	34	ps.44,308,000	ps. 45,063,000	— ps.755,000	Ord. Stk.	4½	1	2	Nil
	Buenos Aires Central	190	4.1.41	$64,800	— $21,900	27	$2,348,700	$2,832,700	— $484,000	—	—	—	—	—
	Buenos Ayres Great Southern	5,082	22.2.41	ps.2,847,000	— ps.269,000	34	ps.71,373,000	ps. 78,506,000	— ps.7,133,000	Ord. Stk.	10⅜	3	4	Nil
	Buenos Ayres Western	1,930	22.2.41	ps. 929,000	+ ps. 98,000	34	ps.24,397,000	ps. 26,421,000	— ps. 2,024,000	,,	8⅜	2	3½	Nil
	Central Argentine	3,700	22.2.41	ps.2,061,000	+ ps.400,750	34	ps.50,162,450	ps. 60,856,750	— ps10,694,300	,,	8½	2	2¾	Nil
	Do.	—	—	—	—	—	—	—	—	Dfd.	4	¼	1¼	Nil
	Cent. Uruguay of M. Video	972	22.2.41	24,302	— 2,602	34	733,943	701,194	+ 32.749	Ord. Stk.	3¼	¼	1¼	Nil
	Costa Rica	188	May 1940	17,282	— 7,020	48	193,339	245,516	— 52,177	Stk.	23⅛	14	15½	12⅞
	Dorada	70	Jan. 1941	12,200	—	4	12,200	12,200	—	1 Mt. Db.	99	97½	98	6⅛
	Entre Rios	810	22.2.41	ps. 197,000	— ps. 27,500	34	ps. 7,375,400	ps. 8,405,300	— ps.1,029,900	Ord. Stk.	4	½	1½	Nil
	Great Western of Brazil	1,016	22.2.41	12,600	— 1,200	8	94,500	109,000	— 14,500	Ord. Sh.	4/-	1/-	⅞	Nil
	International of Cl. Amer.	794	Dec. 1940	$446,239	— $99,327	52	$5,544,438	$5,994,056	— $449,618	—	—	—	—	—
	Interoceanic of Mexico	—	—	—	—	—	—	—	—	1st Pref.	9d.	9d.	½	Nil
	La Guaira & Caracas	22¾	Jan. 1941	6,125	— 1,485	4	6,125	7,610	— 1,485	—	6	4	—	—
	Leopoldina	1,918	22.2.41	27,288	+ 4,440	8	187,566	177,336	+ 10,230	Ord. Stk.	2⅞	½	¾	Nil
	Mexican	483	14.1.41	ps. 277,800	— ps. 12,400	2	ps. 538,800	ps. 539,500	— ps. 700	,,	2/11½	⅛	½	Nil
	Midland of Uruguay	319	Dec. 1940	12,398	+ 1,938	26	69,025	55,678	+ 13,347	—	—	—	—	—
	Nitrate	386	28.2.41	4,321	— 1,266	9	17,609	34,792	— 17,183	Ord. Sh.	2¾	1½	2	6½
	Paraguay Central	274	22.2.41	$2,576,000	— $517,000	34	$111,115,000	$108,993,000	+ $2,122,000	Pr. Li. Stk.	41	36	30½	19½
	Peruvian Corporation	1,059	Jan. 1941	67,820	— 13,235	30	461,145	464,990	— 3,845	Pref.	4	1	2	Nil
	Salvador	100	21.12.40	£25,750	+ £3,170	25	£252,021	£296,854	— £44,833	—	—	—	—	—
	San Paulo	153½	16.2.41	31,875	— 5,098	7	244,500	236,334	+ 8,166	Ord. Stk.	50	23	27½	9⅛
	Taltal	160	Jan. 1941	2,295	— 1,365	31	19,435	17,800	+ 1,635	Ord. Sh.	15/1½	⅜	⅝	9¾
	United of Havana	1,353	22.2.41	47,244	+ 3,742	34	597,854	651,513	— 53,659	Ord. Stk.	⅜	¼	⅜	Nil
	Uruguay Northern	73	Dec. 1940	1,442	— 10	26	7,013	6,261	+ 752	—	—	—	—	—
Canada	Canadian National	23,637	21.2.41	988,975	+ 160,426	7	7,132,277	6,093,899	+ 1,038,377	—	—	—	—	—
	Canadian Northern	—	—	—	—	—	—	—	— 4 p.c.	Perp. Dbs.	86	68	89	4½
	Grand Trunk	—	—	—	—	—	—	—	—	4 p.c. Gar.	105¼	95½	102½	3⅞
	Canadian Pacific	17,153	21.2.41	647,000	+ 90,400	7	4,949,400	4,223,800	+ 725,600	Ord. Stk.	9⅜	4⅞	8	Nil
India†	Assam Bengal	1,329	30.4.40	45,187	+ 6,529	4	135,060	120,437	+ 14,623	Ord. Stk.	99⅜	71	100	3
	Barsi Light	202	10.1.41	4,327	+ 787	41	124,207	100,492	+ 23,715	—	—	—	—	—
	Bengal & North Western	2,086	31.1.41	267,075	+ 5,891	18	999,900	922,519	+ 77,381	Ord. Stk.	283	234	294	5⅞
	Bengal Dooars & Extension	161	Sept. 1940	14,625	+ 508	26	78,405	66,243	+ 12,162	,,	218½	195	225	5¼
	Bengal-Nagpur	3,269	31.12.40	284,550	+ 15,859	39	6,543,848	5,895,495	+ 648,353	,,	96	83⅞	99½	4
	Bombay, Baroda & Cl. India	2,986	20.2.41	355,200	+ 81,075	48	9,086,925	8,026,650	+ 1,060,275	,,	108	99	107½	5⅜
	Madras & Southern Mahratta	2,967	31.12.40	218,625	+ 614	39	4,544,609	4,292,891	+ 251,718	,,	104	97⅞	103½	7½
	Rohilkund & Kumaon	571	31.1.41	64,275	+ 7,129	18	208,350	192,796	+ 15,554	,,	284	238	285	5⅝
	South Indian	2,542	31.12.40	141,648	+ 8,811	39	3,420,638	3,075,356	+ 345,282	,,	93¾	83	93½	5⅛
Various	Beira	204	Dec. 1940	63,037	—	13	208,505	—	—	—	—	—	—	—
	Egyptian Delta	623	20.12.40	9,626	+ 2,520	38	169,255	155,708	+ 13,547	Prf. Sh.	7/10½	⅜	⅞	Nil
	Kenya & Uganda	1,625	—	—	—	—	—	—	—	—	—	—	—	—
	Manila	—	—	—	—	—	—	—	—	B. Deb.	53	44½	46½	7½
	Midland of W. Australia	277	Nov. 1940	15,716	+ 4,027	22	78,885	63,495	+ 15,390	Inc. Deb.	88	80	87½	6⅝
	Nigerian	1,900	28.12.40	49,061	+ 258	39	1,537,595	1,336,451	+ 201,144	—	—	—	—	—
	Rhodesia	2,442	Dec. 1940	460,036	—	13	1,436,259	—	—	—	—	—	—	—
	South Africa	13,287	18.1.41	773,368	+ 99,078	42	£9,030,638	27,144,961	+ 1,885,677	—	—	—	—	—
	Victoria	4,774	Aug. 1940	888,289	+ 190,022	9	1,756,717	1,383,157	+ 373,560	—	—	—	—	—

Note. Yields are based on the approximate current prices and are within a fraction of ⅛ Argentine traffics are now given in pesos
† Receipts are calculated @ 1s. 6d. to the rupee